



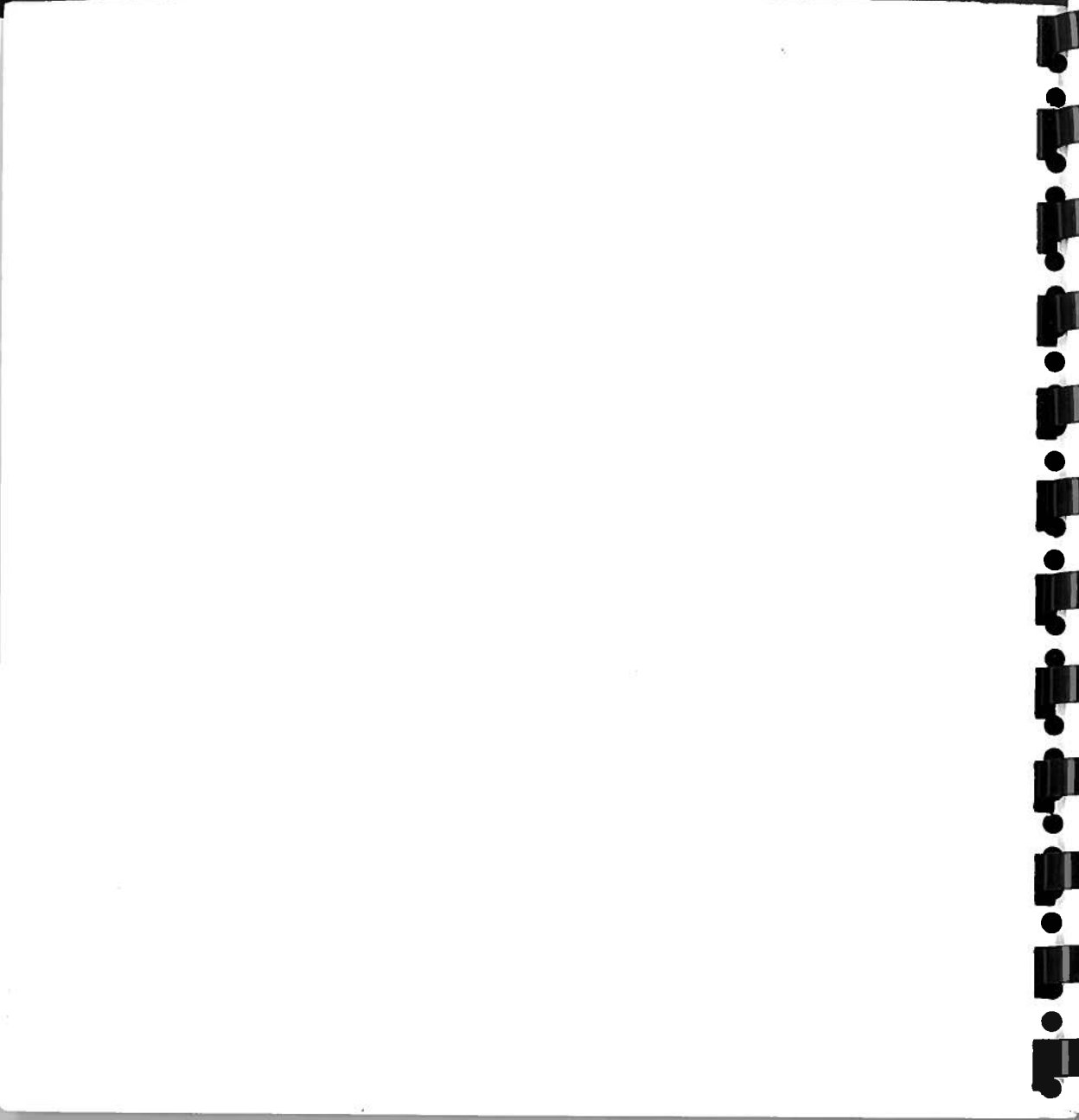


TABLE OF CONTENTS

Chapter 1 • Introduction

Welcome Aboard!	1
The Patchmeister's Seven Basic Components	1

Chapter 2 • Getting Started

Quick Installation	5
--------------------	---

Chapter 3 • A Tour Of Menus

Menu Overview	7
Project Menu	8
Bank Menu	9
Library Menu	11
Driver Menu	12
MIDI Menu	13
Settings Menu	14
B&P Pro / SuperJAM! Menu	15

Chapter 4 • Drivers: Talking To Your Synths

What Is A Driver?	17
The PatchMeister Window	17
<i>The Patchmeister Window Buttons</i>	18
<i>Midi Routes In The Driver List</i>	20
<i>The Midi Route Button</i>	21

TABLE OF CONTENTS

<i>Saving Driver Lists</i>	23
----------------------------	----

Chapter 5 • Help!

Using The Help Feature	25
------------------------	----

Chapter 6 • Listening To Your Patches

Auditioning Sounds	27
--------------------	----

<i>What Synth Shall I Play?</i>	27
---------------------------------	----

<i>Playing Music</i>	27
----------------------	----

<i>Auto Audition</i>	29
----------------------	----

<i>Hanging Notes</i>	30
----------------------	----

Chapter 7 • Banks

What Are Banks?	31
-----------------	----

<i>Opening A Bank Window</i>	31
------------------------------	----

<i>Bank Window View Options</i>	32
---------------------------------	----

<i>Printing Banks</i>	32
-----------------------	----

<i>Saving Banks</i>	32
---------------------	----

<i>Sending Bank Windows To Your Synth</i>	33
---	----

Customizing Your Banks	34
------------------------	----

<i>Notes & Search Keys</i>	34
--------------------------------	----

<i>Bank Editing Buttons</i>	34
-----------------------------	----

<i>Midi Route</i>	37
-------------------	----

TABLE OF CONTENTS

<i>Bank Menu</i>	38
------------------	----

Chapter 8 • SysEx Files

What Are Sysex Files?	39
<i>Opening A SysEx Window</i>	39
<i>Saving SysEx Files</i>	40
<i>Sending SysEx Windows To Your Synth</i>	40
<i>Notes & Search Keys</i>	40
<i>MIDI Route</i>	40

Chapter 9 • Snapshots

What Are Snapshots?	41
<i>Opening A Snapshot Window</i>	41
<i>Taking A Snapshot Of Your MIDI Setup</i>	41
<i>Saving Snapshots</i>	43
<i>Sending Snapshot Windows To Your Synth</i>	43
<i>Notes & Search Keys</i>	43
<i>MIDI Route</i>	44

Chapter 10 • Setups

What Are Setups?	45
<i>Opening A Setup Window</i>	45
<i>Saving Setups</i>	46

TABLE OF CONTENTS

<i>Sending Setup Windows To Your Synth</i>	46
Creating Setups	46
<i>Notes & Search Keys</i>	46
<i>Setup Editing Buttons</i>	47

Chapter 11 • Capture Files

What Are Capture Files?	49
<i>Opening A Capture Window</i>	49
<i>Capturing A Bulk Dump</i>	49
<i>Saving Capture Files</i>	50
<i>Sending Capture Windows To Your Synth</i>	50
<i>Notes & Search Keys</i>	51
<i>MIDI Route</i>	51

Chapter 12 • Libraries

Using Libraries	53
<i>Opening A Library Window</i>	53
<i>Display Options...</i>	53
<i>Search And Locate...</i>	54
<i>Printing Libraries</i>	55
<i>Saving Libraries</i>	55
<i>Rebuilding Libraries</i>	56
<i>Deleting Files From Libraries</i>	56

TABLE OF CONTENTS

Library Window Buttons	56
<i>Volume Selector</i>	56
<i>Next Volume</i>	57
<i>Drawer Selector</i>	57
<i>Parent</i>	57
<i>Magnifying Glass</i>	57
<i>MIDI Route</i>	58
<i>Clipboard</i>	58

Chapter 13 • Importing/Exporting

Sharing Your Files With Other Programs	59
<i>Importing Files (Bring 'Em On In)</i>	59
<i>Exporting Files (Send 'Em On Out)</i>	60

Chapter 14 • Driver Creation

What's A Driver?	61
The Create Driver Window - An Overview	61
Create Driver Window Gadgets	64
Question Mark Button Overview	68
Ch, D, N1, N2, Ck Overview	70
Cycle Button Parameters	72
Text Parameters	76
How To Create A Driver	81

TABLE OF CONTENTS

Chapter 15 • Bars&Pipes Professional And SuperJAM!

The PatchMeister Accessory	91
Installation	91
Bars&Pipes Professional	92
SuperJAM!	93
Complete Integration	93

Appendix A

Shortcuts	95
-----------	----

Appendix B

Driver Creation Error Messages	97
--------------------------------	----

Index

Chapter 1

Welcome Aboard!

Welcome to The PatchMeister, the Universal MIDI Librarian for everyone!

The PatchMeister's goal is to simplify your "MIDI" life. You will find comprehensive, easy-to-use features at every turn, whether you are trying to customize a Bank or rebuild an entire MIDI Setup. Extensive Librarian options allow you to sort, search and view your Libraries as you see fit. Also, if The PatchMeister doesn't come with a Driver for your MIDI instrument, you can create one quickly and easily.

Even if you never have to create a Driver from scratch, you probably should take a peek at your synthesizer's supplied Driver in the Create Driver window. You just might learn something! But first, let's take the time to become familiar with some of The PatchMeister's basic components...

The PatchMeister's Seven Basic Components

You will find it easier to navigate through The PatchMeister if you understand its seven (7) working components: Drivers, Libraries, Banks, SysEx Files, Snapshots, Setups and Capture Files. Briefly, let's discuss each of these elements...

Drivers

Simply stated, The PatchMeister cannot run without Drivers.

Drivers contain all of the MIDI commands needed to communicate with a given synthesizer. They also contain specific information about

INTRODUCTION

an instrument's MIDI files, such as the number of patches in a Bank or the length of a patch name.

Example:

If you are planning to use The Patch-Meister with a Korg M-1, you will have to install the M-1 Driver so that The Patch-Meister will know how to communicate with your synth.

Libraries

Libraries are special files that contain information about the other MIDI files residing in the same directory. You never have to be concerned with creating Libraries because they are created (or updated) automatically every time you save or delete a MIDI file. Their job is to keep an accurate record of your files so that you can have a wide range of viewing options whenever you want to browse or search through your MIDI data.

You will notice that the Library window resembles a file requester in that you can traverse through different directories. Conceptually, Libraries seem to span directories, but in reality, separate Library files are being opened as you move from drawer to drawer.

Libraries store such facts as each MIDI file's name, change date, comment, search key and type(bank, sequence, etc.) Also, each Library pertains to a single Driver. You may have an MT-32 Library, a DX-7 Library and an M-1 Library.

Banks

More than likely, you are already familiar with the concept of Banks. Banks are files that can be sub-divided into a fixed number of fixed length items. For example, your synth may contain a Bank of 32 sounds or a Bank of 64 timbres.

All Banks are displayed in the Bank window. Bank windows are opened when you use the MIDI menu Get From Synth... item to get a Bank file from your synthesizer, or when you are in the Library window and you double-click over a Bank's filename.

SysEx Files

Any single MIDI file that is not a Bank will be referred to as a SysEx file. SysEx files cannot be sub-divided into symmetrical items.

All SysEx files are displayed in the SysEx window. SysEx windows are opened when you use the MIDI menu Get from Synth... item to get a SysEx file from your instrument, or when you are in the Library window and you double-click over a SysEx file's filename.

Snapshots

Snapshots are a collection of Banks and SysEx files taken from all of the synths in your setup at a given point in time. In essence, they contain a "snapshot" of your MIDI environment. They provide an easy way to save and later recreate a specific MIDI setup.

Setups

Setups are an alternative to Snapshots. Previously saved Banks, SysEx files, Snapshots and Capture files can be grouped into Setups so that MIDI environments can be recreated by sending one (1) Setup file instead of sending many individual MIDI files. Actually, a Setup just

INTRODUCTION

contains the filenames of the files that will be sent to your synths when you instruct The PatchMeister to send that Setup.

Capture Files

Capture files contain bulk dump MIDI data that was "captured" after a bulk dump was manually invoked by pushing a button on a synthesizer. Drivers are not used during the "capture" process.

Snapshots and Setups will more than likely store information pertaining to more than one Driver. Capture files do not pertain to any Driver. Because of this, these files cannot be stored in a specific Driver's Library. They are stored in a special Library that contains only Snapshot, Setup and Capture files, the Snaps & Setups Library. This Library is also maintained automatically.

Chapter 2

Quick Installation

The PatchMeister is easy to install on your Amiga computer. You can install it on a hard disk system, or run it directly from your floppy drive(s).

Hard Disk Installation:

-
1. Make sure you have at least 2 megs of space left on your hard disk.
 2. Place the PatchMeister program disk in any floppy drive.

NOTE → The installation process will write to your program disk. Make sure that it is not write-protected.

3. Double-click on the Hard Disk Install icon. This runs the hard disk installation procedure.
 4. Store The PatchMeister disk in a safe place.
 5. Run the PatchMeister from the PatchMeister directory on your hard disk.
-

GETTING STARTED

Floppy Disk Installation:

-
1. Prepare a second blank disk.
The installation program will place additional files on this disk.
 2. Double-click on the Floppy Disk Install icon, then follow the prompts as they appear on the screen.

NOTE → During the installation, the PatchMeister installation program will write on the PatchMeister. Make sure that your disk is not write-protected.

3. Duplicate the PatchMeister disk.
Please consult your computer manual if you have questions.
 4. Run The PatchMeister from the duplicate disk.
-

Chapter 3

Menu Overview

The PatchMeister uses one set of menus, so the same menu options are listed for every window. However, the active window will determine which of those options are actually available at a given point in time. Menu items that can't be used with the active window will appear fuzzy, or ghosted, and you won't be able to select them.

The active window also plays an important role in determining what the menu item will actually do.

Example:

If you select the Project menu Print Item while the active window is a Bank window, the contents of that Bank window will be printed.

If the active window happens to be a Library window, that Library will be printed.

If you choose the Bank menu Clear All Items option when the active window is The PatchMeister window, all of the installed Drivers will be removed.

★ TIP ★ If you want to perform an action on a specific window, click anywhere within that window to make it the active window. Then select the desired menu option.

A TOUR OF MENUS

★ TIP ★ The active window has red text in its title bar, while all other windows have blue text in theirs.

The menu strip used by The PatchMeister contains seven (7) menus: Project, Bank, Library, Drivers, MIDI, Settings and B&P Pro/SuperJAM! Let's begin our review...

Project Menu

The Project menu is comprised of the following items:

Save

Use the Save menu item when you want to write a file to disk without being prompted for a filename.

The active window determines exactly what is going to be saved. Click the mouse anywhere inside the window you want to save. This will "activate" the window.

Select the Save menu item. The file will be rewritten using its original filename. You will, however, be prompted to provide a filename the first time you try to save a particular window.

Save As...

This menu item saves a window to disk after prompting you to enter a filename. The active window determines exactly what is going to be saved.

Export...

Selecting the Export option will allow you to save the contents of the active window in a simplified format for use outside of The

A TOUR OF MENUS

PatchMeister program. The exported file will contain raw SysEx data in a format that can be sent directly to your synth. (See Chapter 13, "Import / Export.")

Import...

Import is the counterpart to Export. In order to use files created by other librarian programs, you need a way to get them into your PatchMeister environment. The Import menu item attempts to do just that.

The Driver that is highlighted in The PatchMeister window will be used for the import. Select the Import menu item to invoke a requester asking you to select the type of file to import.

Print

This menu item can be used to print the contents of an active Bank window, an active Library window or an active Help window.

About...

This menu item will display information about The PatchMeister.

Quit

Selecting this item lets The PatchMeister know that you are finished. All opened windows will be closed and the program will shut down.

Bank Menu

For the most part, Bank menu items only pertain to Bank windows. The one exception is the Clear All Items option which also applies to

A TOUR OF MENUS

Setup windows and The PatchMeister window. There are seven (7) items under this menu:

View

The View menu item causes the display of the active Bank window to toggle between two (2) different display options.

The first view option displays each patch name. The number of columns used to display the patches is determined by the width of the Bank window.

The second option displays each item's search key along with its patch name. There is always one (1) column when Banks are viewed with this option.

New Bank

Choose this menu item when you want to open an empty Bank window. The active Bank window is used to determine which type of Bank the empty window will store.

Compress Bank

Use this menu item to eliminate quickly all of the empty slots from the active Bank window.

Clear Items

Selecting this menu item will delete all items from the active window. Use this menu item if your intent is to create a new Bank or Setup from scratch. You can also use this menu item to clear all of the installed Drivers from The PatchMeister window.

Undo

Use this menu item if you need to back out a change *just* made to a Bank window.

Save Patch List

This command extracts the patch names from the Bank and saves them as a patch list file. Both SuperJAM! and Bars&Pipes Professional can read these lists and use them to configure patch (or "program") changes by name.

Transfer Patch List (Accessory Version Only)

This command is available only when The PatchMeister is installed as an Accessory within Bars&Pipes Professional version 1.1 or higher. Like Save Patch List, this extracts a patch list from the selected bank, but instead of saving it to disk, it places the list in Bars&Pipes Professional's set of available patch lists.

Library Menu

The five (5) Library menu items only apply to Library Windows:

Options...

The Options... menu item opens a requester allowing you to set the various Library window display options.

For more information, please see Chapter 12, "Libraries."

A TOUR OF MENUS

Find...

Selecting the Find menu item opens a small window allowing you to enter a search key. This search key (along with the other Library menu Options) is used as part of the Library window's selection criteria.

Delete

This menu item allows you to delete files and directories from within a Library window.

Remember, directories must be empty before they can be deleted!

Snapshots & Setups

Use this menu item to open the Library window which will display your Snapshots, Setups and Capture files.

Rebuild Library

The Rebuild Library menu option can be used to resync a PatchMeister Library with the actual contents of its directory.

Driver Menu

Menu options pertaining to Drivers can be found in the Drivers Menu:

Open Driver Setup...

If you like, you may use the Project menu Save As... item to save a particular Driver setup you have created in The PatchMeister window. The Open Driver Setup... item can then be used to load the previously saved set of installed Drivers at a later time.

Bring To Front / Send To Back

The Bring To Front item will move the window containing all of the installed Drivers (The PatchMeister window) to the front of the screen display.

This same menu item will then change to Send To Back, and can be used to send The PatchMeister window to the back of the screen display.

Create Driver

Use the options in this command to view, create and/or edit Drivers:

NEW: Use this sub-item if you want to create a new Driver.

OPEN: Use this sub-item if you want to edit (or view) an existing Driver.

MIDI Menu

The MIDI Menu contains items that control MIDI communications. The five (5) menu items are:

Get From Synth...

Use this menu item to get SysEx data from a MIDI instrument. The SysEx data will be retrieved from the instrument highlighted in The PatchMeister window.

You will be presented with a requester displaying the MIDI route of the instrument as well as the different SysEx types stored in the instrument. You can change the MIDI route if necessary. Click on the type of SysEx file you want to retrieve. An appropriate window will be opened after the data has been received.

A TOUR OF MENUS

Send To Synth...

Use this menu item to send SysEx data to a MIDI instrument.

After selecting this menu item, you will be presented with a requester displaying the MIDI route to be used for the "send".

If you are in a Library window, use of this menu option will send the file you've highlighted. If you are not in a Library window, the contents of the active window will be sent to your synth.

New Snapshot...

This menu item can be used to take a "snapshot" of your MIDI environment. (See Chapter 9, "Snapshots.")

New Setup

Use this menu item to open an empty Setup window. Setup files are built by dragging file names from different Library windows into the Setup window. (See Chapter 10, "Setups.")

New Capture...

Use this menu item to "capture" a bulk dump from a synth that does not have a Driver. (See Chapter 11, "Capture Files.")

Settings Menu

The Settings menu contains a variety of options:

Auto Audition

When this menu item is checked, an arpeggio will automatically be played each time a Bank item is sent to your synth through use of the

A TOUR OF MENUS

Bank window's TO SYNTH button. Of course you can still use your Amiga keyboard to further audition that Bank item by typing any combination of letters on your Amiga keyboard. (See Chapter 6, "Auditioning Sounds.")

NOTE → The arpeggio will be played in the octave assigned to the QWERTY keys.

Interlace (Stand-Alone Version Only)

This menu item allows you to select whether or not you wish to run The PatchMeister using an interlace screen.

Check Memory (Stand-Alone Version Only)

The Check Memory item will open a small window which lists all available memory.

Check Disk Space (Stand-Alone Version Only)

Selecting this item opens a small window which lists pertinent information about the disks currently in use.

B&P Pro / SuperJAM! Menu

This menu contains options available in the Accessory version of The PatchMeister. When loaded into Bars&Pipes Professional, this menu is called "B&P Pro", otherwise it's called "SuperJAM!." Two options are available for Bars&Pipes Professional, while only the first is available for SuperJAM!:

A TOUR OF MENUS

All To Back

Sends all of The PatchMeister's windows to the back, bringing Bars&Pipes Professional (or SuperJAM!) windows to the front. Select this command a second time to bring The PatchMeister's windows to the front again.

Auto Load

This option determines how The PatchMeister files integrate into your Bars&Pipes Professional song files:

ENABLE: Check this option if you want Bars&Pipes Professional to include a PatchMeister file name when it saves a song.

ATTACH FILE: This command attaches the currently selected file (in a Library window) to Bars&Pipes Professional. This file will save with the Bars&Pipes Professional song and load when the song is reloaded.

VIEW FILE: Displays the name of the currently attached file.

Chapter 4

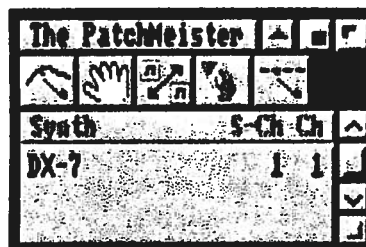
What is a Driver?

As you know, The PatchMeister cannot run without Drivers. Drivers contain all of the MIDI commands that are used to communicate with your synths. But Drivers aren't enough. When The PatchMeister wants to send a command it has to know where to send it. That's where MIDI routes come in to play.

This chapter will discuss installing Drivers and setting MIDI routes.

The PatchMeister Window

The PatchMeister window is the control center of the program. This window lists all of the installed Drivers along with their corresponding MIDI routes.



Any changes you make to this window will be remembered in the respect that what you see in this window when the program shuts down will appear in this window the next time that you run The PatchMeister.

DRIVERS: TALKING TO YOUR SYNTHS

The PatchMeister window is open the entire time that The PatchMeister is running.

The Patchmeister Window Buttons

Drivers are installed, rearranged, and removed through use of the buttons located at the top of this window. When you click over one of these buttons, the button will become highlighted and the cursor will change to reflect the edit mode (button) you have just chosen. You will remain in this edit mode until you click over a different button or you click on the same button a second time to shut it off.



- Use the PENCIL button to install the Drivers needed for your keyboard(s) and/or sound module(s).

Choose a location for the Driver by clicking somewhere within the Driver list box in The PatchMeister window.

You will be presented with a file requester. Select the specific Driver that you wish to install.



- The HAND button allows you to rearrange the installed Drivers in The Patchmeister window.

Point to the synth (Driver) you want to move, and press the left mouse button as you drag this synth around the window. Release the left mouse button when you are over the area that you want to drop the synth (Driver) that you are dragging. The synth will be removed from its original slot and will be inserted into the destination slot. Synths in between the original and destination slots will be shifted up by one.

You can also use the HAND button to install drivers! If you should elect to drop the synth (Driver) after the last installed Driver, a copy of that synth (Driver) will be appended to the end of the installed Driver list. Duplicate Drivers are numbered sequentially starting with one (1).

DRIVERS: TALKING TO YOUR SYNTHS

This number is in no way associated with a particular Driver for the rest of its life. It is simply a count. The first occurrence of a driver is one (1), the second is two (2), etc. As Drivers are rearranged, they are renumbered to comply with the previous statement.



- The SWAP button provides another way to rearrange the installed Drivers In The Patchmeister window.

Point to the synth (Driver) you want to move, and press the left mouse button as you drag this synth around the window. Release the left mouse button when you are over the synth that you want to SWAP with the synth (Driver) that you are dragging. The synth will be

You can also use the SWAP button to install Drivers by dragging a synth (Driver) past the end of the installed Drivers list!



- The ERASER button will remove (ERASE) Drivers that you no longer want installed in The PatchMeister environment.

Click over the synth (Driver) that you want to delete. The synth will be removed. If you have removed the last occurrence of a synth (i.e. you just removed the last of your two (2) DX-7's) all of the windows associated with the Driver (i.e. all of the DX-7 windows) will be closed.

The ERASER button will turn off after you have removed one (1) Driver. If you want to remove ALL of the Drivers, activate The Patchmeister window and then select the Bank menu Clear All Items option.



- You can use the DASH button to insert lines of dashes to help organize large Driver setups.

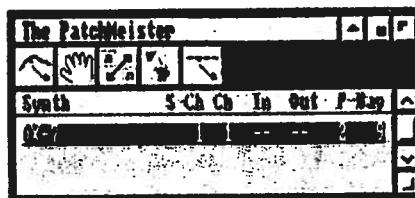
Select a destination for the line of dashes by clicking over an installed synth (Driver) in The PatchMeister window.

DRIVERS: TALKING TO YOUR SYNTHS

MIDI Routes In The Driver List

It is important that you assign the correct MIDI route to your Drivers. This way, The PatchMeister knows how to communicate with each synthesizer.

Use the window's sizing button to open The Patchmeister window to its fullest width. If one of The PatchMeister window's control buttons is highlighted, click on it to turn it off.



The PatchMeister window describes each driver's MIDI route with a series of numbers to the right of each driver's name.

To change a MIDI route value, click down on it and drag the mouse. The number will turn white and the pointer will disappear. Move the mouse up to increment and down to decrement the value. Release the mouse button when the correct value is displayed.

The PatchMeister displays abbreviations for each of the values across the top of the Driver List. Here's what they mean:

- **S-Ch:** SysEx Communications Channel. Make sure this channel matches the MIDI channel that the instrument uses for its "System Exclusive" MIDI communications.

DRIVERS: TALKING TO YOUR SYNTHS

- **Ch:** Audition Channel. This channel is used for the "Note On" and "Program Change" commands generated by The PatchMeister.

This channel will more than likely be the same as the S-Ch channel. However, some synths (i.e. Roland MT-32) use one channel for SysEx Communications, and a different set of channels for "Note On" commands. Make sure this channel is set to match the channel on which your synth will respond to "Note On" commands.

- **In:** MIDI In. Bars&Pipes Professional users may select a MIDI In Tool.
- **Out:** MIDI Out. Bars&Pipes Professional users may select a MIDI Out Tool.
- **P-Bay:** Patch Bay MIDI Channel and Patch Bay Program Number. If you are using a patch bay, make sure the MIDI channel matches the channel that your patch bay is listening to, and that the program number is the program (patch) that will establish the proper MIDI route to this synth.

The MIDI Route Button

As we have just discussed, MIDI routes must be assigned to your installed Drivers. MIDI routes are also associated with every file that you save and every window that you open! As you work with The PatchMeister, you will use one standard button, the MIDI Route button, in many of the windows, to specify the MIDI route for a particular file or window. Although this button does not appear in

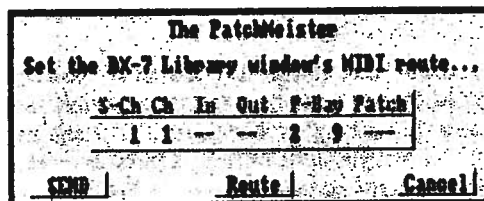
DRIVERS: TALKING TO YOUR SYNTHS

The PatchMeister window, this is a good time to talk about it.



When you get a SysEx file from your synth, the window that opens will acquire the MIDI route of the Driver that was used to obtain the SysEx. When you open a file, the window will use the MIDI route that was associated with the saved file. A window's MIDI route is followed when you send the contents of the window to a synth. Also, it is the route that is stored with the file when you save the contents of the window.

Every window that has a MIDI route associated with it will have a MIDI ROUTE button. When you click on this button, a requester will open allowing you to view/change that window's MIDI route. This requester adds one (1) element to the route that is missing from The PatchMeister window:



- **Patch:** Patch Number. Some SysEx requests require that you specify a specific patch number. For instance you may request that Patch 5 be transmitted.

DRIVERS: TALKING TO YOUR SYNTHS

When you save a file, it will be saved with its window's MIDI route. You can use the Library window's MAGNIFYING GLASS button if you want to view the MIDI route that was saved with a particular file. When you send a file, the MIDI route requester used for the SEND process will default to the route that was saved with the file.

Saving Driver Lists

If you are only working with one (1) MIDI setup you will never have to save the contents of The PatchMeister window. Every time you run The PatchMeister it will start-up using the same Drivers and MIDI routes that it was using at the end of your last work session.

If, however, you will be working with multiple setups, you can use the Project menu Save As... item to save a particular Driver setup so that you can reuse it at a later date. Use the Driver menu Open Driver Setup... option to load previously saved Driver Setups.

DRIVERS: TALKING TO YOUR SYNTHS

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Chapter 5

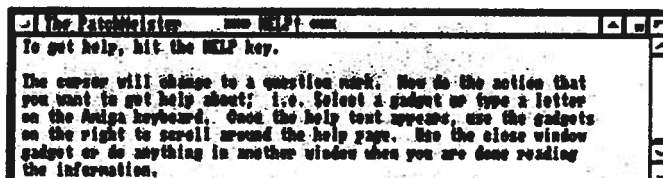
Using the Help Feature

Have you ever opened a new window in a program you were just trying to learn and wondered what a certain button was supposed to do? Or maybe you just couldn't quite remember the purpose of one of its menu options? Becoming familiar with a new piece of software can certainly keep you hopping between working with your computer and thumbing through your manual. What if you could just click on a button and it could tell you what it did?

Say no more! In essence, The PatchMeister has an on-line manual that you can access while the program is up and running. Here's how it works...

If you want help, press the <HELP> key.

You'll find that the cursor will change into a question mark. This signifies that you are in help mode and The PatchMeister is waiting to see what you want help about. If you want to know what a button does, click on it. If you want to know what the <ESC> key does, press the <ESC> key. If you have a question about a menu item, select it. When you are in help mode, normal processing is suspended and instead you will receive help text pertaining to the action that you just performed. It's as simple as that!



HELP!

When you are done reading the information, you can close the Help window or hit the <HELP> key to re-enter the help mode and get information on another topic. If you like, you can use the Project menu Print item to print the contents of the Help window.

Chapter 6

Auditioning Sounds

This chapter discusses how to "play" music so that you can audition (hear) the patches in your Banks. It assumes you have already installed a Driver for your synth, and that you understand how to connect your synth to The PatchMeister by adjusting its MIDI route in The PatchMeister window.

NOTE → This chapter shows you how to "send" notes to your synth, but if your synth is not set up to "receive" these notes it will not be able to play them! Chapter 4, "Drivers: Talking to Your Synths," is devoted to helping you establish communication with your instruments. Also, Chapter 7, "Banks," will explain how to use the Bank window TO SYNTH button to send individual patches to your synth.

What Synth Shall I Play?

The active window determines what synth you will be playing. If you click within a DX-7 Bank window, the MIDI route associated with that window will be followed so that you are playing your DX-7. If The PatchMeister window is the active window, you will be playing the instrument that is currently highlighted in The PatchMeister window.

Playing Music

The PatchMeister uses a rather different technique to audition patches. This is to allow you to generate musical phrases with real-time flexibility, much like you can when you sit down at your

LISTENING TO YOUR PATCHES

synthesizer's keyboard. As a matter of fact, you can think of your Amiga keyboard as a synth keyboard!

We have divided the Amiga keyboard into two (2) rows of keys: the QWERTY keys and the ZXCVCBN keys. The row of keys immediately above the QWERTY keys handles the QWERTY sharps and flats, while the row above the ZXCVCBN keys handles the ZXCVCBN sharps and flats. Pitches are generated as follows:

2 3 5 6 7 9 0 = \
Q W E R T Y U I O P []

will generate pitches:

C D E F G A B C D E F G

and

S D G H J L ;
Z X C V B N M , . /

will generate pitches:

C D E F G A B C D E

The QWERTY and ZXCVCBN keys function as two (2) separate entities, and you can assign a different octave (pitch range) and velocity (loudness) to each row of keys. If you like, you can have the QWERTY keys playing high pitched notes very softly and the ZXCVCBN row playing low pitched notes at the maximum volume. Here's where the numeric keypad comes into play.

7 8 9
4 5 6
1 2 3
0

(Located to the right of
the Amiga keyboard.)

LISTENING TO YOUR PATCHES

If you want to hear the note you just played at different velocities, press any of the numeric keys on the right-hand side of your Amiga keyboard. The lower the numeric value, the softer the note will be played. From this point forward, any note you play on the *same* row of keys will be played at the velocity of the last numeric key that was pressed.

In other words, to change the volume of the QWERTY keys, press any key located in the QWERTY row. Then begin pressing keys in the numeric keypad until you find a suitable volume. Next return to the QWERTY keys and you will find that all of the notes being generated are at the new volume. Notes generated by the ZXCVBN keys will be unaffected.

Octaves can be adjusted in the same manner, but require that you hold down the <SHIFT> key while you are typing in the numeric keypad. For example, to change the octave of the ZXCVBN row of keys, press any note in the ZXCVBN row. Then, hold down the <SHIFT> key while you press keys in the numeric keypad. The higher the number, the higher the pitch. When you have located a suitable octave, return to the ZXCVBN keys and you will find that the notes being generated are in the new octave. Notes generated by the QWERTY keys will be unaffected.

The QWERTY keys will default to play pitches in octave 5 (numeric key 5) with a velocity of 64. The ZXCVBN keys will default to play pitches in octave 4 (numeric key 4) with a velocity of 64. To give you a point of reference, octave 5 begins with middle C, and a velocity of 64 is the mid-way point between loud and soft.

Auto Audition

You may want to use the Settings menu Auto Audition option. When this menu item is checked, an arpeggio will automatically be played each time a Bank item is sent to your synth through use of the Bank

LISTENING TO YOUR PATCHES

window's TO SYNTH button (See Chapter 7, "Banks"). Of course you can still use your Amiga keyboard to further audition that Bank item.

NOTE → The arpeggio will be played in the octave assigned to the QWERTY keys.

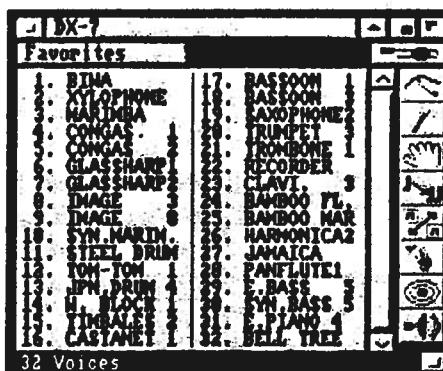
Hanging Notes

Remember, the <ESC> key can be used to turn off hanging notes in all but the most stubborn cases!

Chapter 7

What Are Banks?

As previously stated, Banks are files that can be sub-divided into a fixed number of fixed length items called patches. For instance, a Bank may contain 64 Sounds or 32 Performances. The type of Bank (i.e., 64 Sounds) will be displayed at the bottom of the Bank window. The Driver being used for the Bank will appear in the window title bar.



Opening A Bank Window

There are several ways to open a Bank window:

1. Select the MIDI menu Get from Synth... item and then request a Bank from your synthesizer.
2. Double-click on a Bank's filename in a Library window to open a previously saved Bank file.
3. Use the Project menu Import item to import a Bank file.

4. Select the Bank menu New Bank item to open an empty Bank window.

Bank Window View Options

A name and a search key can be assigned to each patch using the MAGIC WAND gadget. Bank windows normally list all of the patch names using as many columns as will fit into the window. The wider the window, the more patches you will be able to see on the screen at one time. The Bank menu View option causes the display of the active Bank window to toggle between the format outlined above, and one format which displays the search key of each patch next to its name. There is always one (1) column when Banks are viewed using this method.

Printing Banks

When you want to print a Bank, keep in mind that you have control over how the Bank is that going to look on paper! The Bank will print using the display format that you have chosen for its window. Fine tune the window display based on the guidance outlined under "BANK WINDOW VIEW OPTIONS" and then select the Project menu Print item. The active Bank window will be printed.

Saving Banks

The Project menu Save or Save As... items can be used to save the active Bank window.

You may have noticed that patch names normally display with a black pen but sometimes appear blue. The reason for this is simple. The Driver file knows how many patches are supposed to be in the Bank, and that number of patches will display with a black pen. If a certain Bank is supposed to have 32 patches and the window lists 35 patches, the first 32 patch names will be black and the last 3 will be blue. This

display scheme will help you keep track of the number of patches that are supposed to be in that Bank.

Bank windows are the work areas where you build your Banks. You are never restricted to having an exact number of patches in a Bank window while you are editing a Bank. This flexibility makes it possible for The PatchMeister to support a wide range of work habits. However, when it comes time to SAVE or SEND the Bank, it has to have the number of patches that is specified in its Driver.

Sending Bank Windows To Your Synth

Bank windows can be sent to your synth in one of two ways: By selecting the MIDI menu Send to Synth item -or- by clicking over the Bank window's MIDI route gadget. In both cases, the MIDI route requester will open. Adjust the MIDI route (if necessary) and then click over the SEND button. The contents of the Bank window will be sent to your synth using the designated MIDI route.



SENDS are more forgiving than SAVES. If, for example, the Bank window contains 35 patches and the Driver specifies that the Bank should contain 32 patches, only the first 32 patches will be sent. If that same Bank window would have contained 18 patches, an error requester would have reminded you that the Bank is supposed to have 32 patches.

Customizing Your Banks

The remainder of this chapter will explain how you can customize Banks for your Libraries.

Notes & Search Keys

If you press the left mouse button while pointing over the Bank's name, you will be presented with a requester displaying the current comment and search key that is associated with the Bank. You may change this text in any way you like.

It's not necessary to add comments and/or search keys to your Banks, but it is highly recommended. The Library menu Find... option can use both of these fields to search through your Libraries and locate matching MIDI files. Also, you can use the Library menu Options... item to set the DISPLAY ALL INFO view option so that your Libraries display the search key and comment along with the Bank file name. A little time now may save you a lot later!

Bank Editing Buttons

Banks are edited through use of the buttons located on the right-hand side of every Bank window. When you click on one of these buttons, it will become highlighted and the cursor will change to reflect the edit mode (button) you have just chosen. You will remain in this edit mode until you click on a different button or on the same one a second time to shut it off.

NOTE → The Bank menu "Undo" item is there if you need it. It will back out the LAST change resulting from use of the following Bank window buttons: PENCIL, MAGIC WAND, HAND, DUPLICATOR, SWAP, ERASER or TARGET.

The function of each button is described hereafter:



- The PENCIL button provides a way to insert empty slots into a Bank window.

Point to a patch and press the left mouse button. This patch, as well as all subsequent ones, will be shifted down one position.



- The MAGIC WAND button allows you to rename a patch as well as attach a search key to that patch.

Press the left mouse button as you point to the item that you want to change. A small requester will appear. Enter the new name and search key and press the <ENTER> key. The new name and searchkey will replace the old name and searchkey.



- The HAND button allows you to move items within a specific Bank window.

Point to the item you want to move, and press the left mouse button as you drag this item around the window. Release the left mouse button when you are over the area where you want to drop the dragged item. The item will be removed from its original slot and inserted into the destination slot. Items in between the original and destination slots will be shifted up by one.

If you elect to drop the item past the end of the list of patches, a copy of the item will be appended to the end of the Bank and no other changes will take place.

If you elect to drop the item into another Bank window, a copy of the item will be placed in the second Bank window and the original Bank window will remain unchanged.



- The DUPLICATOR button allows you to duplicate items within or among like Banks.

BANKS

Point to the item you would like to duplicate and press the left mouse button while you drag this item around the screen. Release the left mouse button when you are over the area where you would like to place a copy of the dragged item. You may place the copied item into any similar Bank window.



- The SWAP button allows you to swap selected items within or among like Banks.

Point to a Bank item and press the left mouse button as you drag this item around the screen. Release the left mouse button when you are over the swapped item. You may swap items between any similar Bank windows.



- The ERASER button allows you to delete items from a specific Bank window. All of the subsequent items will be shifted up one position.

Press the left mouse button as you point to the item you want deleted. The item will be deleted when you release the mouse button.



- The TARGET button provides yet another way to build Banks.

First, select the Bank you want to build by clicking the left mouse button while pointing over the Bank's TARGET button. The button will become selected, indicating that you have just marked *this* Bank as the "target" Bank (or the Bank you wish to update.) The pointer will turn into a small target to show that the program is waiting for you to select any item(s) you want placed into the "target" Bank.

Press the left mouse button as you point to the item(s) you want copied into the "target" Bank. The selected item(s) will be appended to the end of the "target" Bank. You may select items from any Bank window displaying similar SysEx data.



- The TO SYNTH button will send a selected item to your synthesizer using the Bank window's MIDI route. Use this button if you would like to audition patches.

Press the left mouse button as you point to the item you want to audition.

You can then test the patch by following the instructions outlined in Chapter 6, "Listening to Your Patches."

You may notice that the MIDI port cursor associated with some Drivers contains the letters PC (i.e., Drivers for the older Yamaha synths.) This stands for Program Change. The letters are present to remind you that since it is not possible for this equipment to receive individual Bank items, Program Changes are sent instead.

This is important to remember because you will have to use the MIDI menu Send to Synth... item to send the entire Bank to your synth before the Program Changes will cause your synth to play the patches you see in the Bank window. You will intermittently have to resend the Bank as you rearrange its patches if you want to ensure that the Program Change commands will cause your synth to play what you are seeing.

MIDI Route



Use the MIDI ROUTE button to invoke display of a requester which allows you to view and/or change the MIDI route associated with *this* Bank window. For more information see Chapter 4, "Drivers: Talking To Your Synths."

BANKS

Bank Menu

Don't overlook the Bank menu. It contains more options that can help you maintain your Banks. For more information, see Chapter 3, "Menu Overview."

Chapter 8

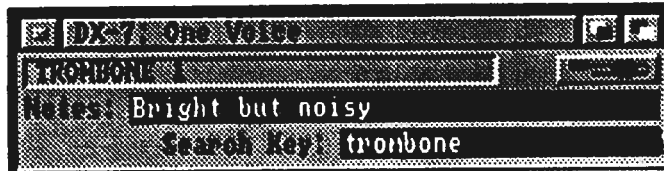
What Are SysEx Files?

From The PatchMeister's point of view, MIDI instruments contain Banks and SysEx files. Banks can be sub-divided into patches, SysEx files cannot be broken down into individual patches. A single timbre, sequencer data, and a program change table would all be considered SysEx files.

SysEx files are displayed using the SysEx window. The name of the Driver and the type of SysEx file are both displayed in the window's title bar.

NOTE → If you don't have a driver for a particular SysEx file type, you can still receive undefined SysEx files by using the Capture file option. (Please see Chapter II)

Opening A SysEx Window



There are several ways to open a SysEx window:

1. Select the MIDI menu Get From Synth... item and then request a SysEx file from your synthesizer.
2. Double-click on a SysEx file's filename in a Library window to open a previously saved SysEx file.
3. Use the Project menu Import item to successfully import a SysEx file.

SYSEX FILES

Saving SysEx Files

The Project menu Save or Save As... items can be used to save the active SysEx window.

Sending SysEx Windows To Your Synth

SysEx windows can be sent to your synth in one of two ways: By selecting the MIDI menu Send To Synth item or by clicking over the SysEx window's MIDI route button. In both cases, the MIDI route requester will open. Adjust the MIDI route (if necessary) and then click over the SEND button. The contents of the SysEx window will be sent to your synth using the designated MIDI route.

Notes & Search Keys

If you like, you may use the two (2) SysEx window string gadgets to attach a comment and search key to a SysEx file before you save it.

The Library menu Find... option can use both of these fields to search through your Libraries and locate matching MIDI files. Also, you can use the Library menu Options... item to set the DISPLAY ALL INFO view option so that your Libraries display the search key and comment along with with the SysEx file name. You will find use of these string gadgets is well worth the effort!

MIDI Route



Use the MIDI Route button to invoke display of the MIDI route requester.

Chapter 9

What Are Snapshots?

Snapshots are a collection of Banks and SysEx files taken from all of the synths in your setup at a given point in time. In essence, they contain a "snapshot" of your MIDI environment. They provide an easy way to save and in turn recreate a specific MIDI setup.

Snapshots are displayed using the Snapshot window. These windows look exactly like SysEx file windows except that the word Snapshot is displayed in their window title bar.

Opening A Snapshot Window

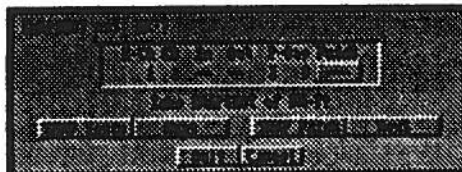
There are two (2) ways to open a Snapshot window:

1. Select the MIDI menu New Snapshot... item to create a Snapshot of your MIDI environment.
2. Double-click on a Snapshot's filename in the Snaps & Setup Library to open an existing Snapshot file.

Taking A Snapshot Of Your MIDI Setup

The "snapshot" process begins when you select the MIDI menu New Snapshot... item.

After selecting this menu item, you will be presented with a file requester asking you to choose a name for the Snapshot file.



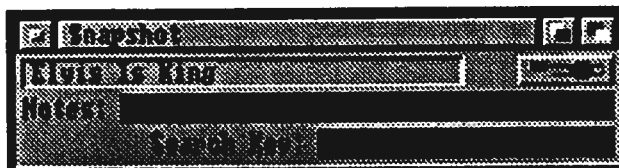
SNAPSHOTS

Once you have chosen the filename, a second requester will open giving you direct control over the "snapshot" process. Use this requester's CANCEL button if you want to abort the "snapshot." If you click on its QUIT button after the "snapshot" has started, The PatchMeister will successfully end the "snapshot" after it has finished receiving the current MIDI file.

Here is how a "snapshot" works: The PatchMeister starts at the top of the installed Drivers list and gives you the option to "snap" or "bypass" each instrument. Click over the SNAP INSTR button if you want to include the current instrument in the Snapshot. Use the NEXT button if you would like to skip to the next Driver.

Clicking on the SNAP INSTR button equates to clicking on ALL of the SysEx type buttons that are available on that instrument's Get from Synth requester. You will be informed as The PatchMeister retrieves each of the individual SysEx types.

If the SysEx type requires a patch number, you will be asked to supply one. The MIDI route's patch number button will become enabled so that you can update it. When the route's patch number has been set to reflect the patch you want included with the Snapshot, click over the SNAP PATCH button. After the patch has been received, you will be prompted to select another patch number. If you want to include another patch, follow the same process outlined above. Otherwise, click on the NEXT button to skip to the next SysEx type.



All Snapshot MIDI data will be written to disk during retrieval, so that the Snapshot file already exists by the time its window opens. The

window opens as a courtesy to you, so that you can easily attach a comment and search key to the existing Snapshot file. If for some reason you do not want to add this information, simply close the window. Otherwise, enter the comment and/or search key and then use the Project menu Save item to save the file with the additional information.

Saving Snapshots

The Project menu Save item can be used to save the active Snapshot window. Snapshots are automatically placed into the Snaps & Setups Library which can be opened by selecting the Library menu Snaps & Setups option.

Sending Snapshot Windows To Your Synth

"Active" Snapshot windows can be sent to your synth in one of two ways: By selecting the MIDI menu Send to Synth item or by clicking over the Snapshot window's MIDI route button. In both cases, a requester will open asking you to confirm your intention to send the Snapshot. Use the requester's QUIT button if you do not want to send the Snapshot. Once you click on the SEND button, the Snapshot's individual MIDI files will begin to be sent one by one and the requester will be updated accordingly. If you click on the QUIT button after the "send" has started, The PatchMeister will stop sending the Snapshot after it has finished sending the current MIDI file.

Notes & Search Keys

If you like, you may use the two (2) string gadgets to attach comments and search keys to your Snapshots. The time taken to add this information will more than pay for itself later when you return to your Snaps & Setups Library to find a particular file. This information is used by the Librarian search and display functions.

SNAPSHOTS

MIDI Route

This button invokes display of the requester which is used to send Snapshot files to your synth(s). For more information see the section entitled "Sending Snapshot Windows To Your Synth."

Chapter 10

What Are Setups?

Previously saved Banks, SysEx files, Snapshots and Capture files can be grouped into "setups" so that MIDI environments can be recreated by sending a single Setup file instead of sending many individual MIDI files.

Setups are simply a list of filenames. They are the names of all of the files that will be sent to your synth(s) when you instruct The PatchMeister to send that Setup. Setups do *not* store MIDI routes. When a Setup is sent to your synth(s), the individual files are sent one at a time using the MIDI routes that were saved those files. File A will be sent using the MIDI route that was saved with File A, File B will be sent using the MIDI route saved with File B, etc.

Setup windows simply list all of the files that are included in the Setup. The name of the file is followed by its Library and directory path. Setups are built by dragging filenames from different Library windows (or other Setup windows) into the Setup window being edited. Setups cannot contain the filenames of other Setup files.

Opening A Setup Window

There are two (2) ways to open a Setup window:

1. Select the MIDI menu New Setup... item to open an empty Setup window.
2. Double-click on a Setup's filename in a Library window to open a previously saved Setup.

SETUPS

Saving Setups

The Project menu Save or Save As... options can be used to save the active Setup window. Setups are automatically placed into the Snaps & Setups Library which can be opened by selecting the Library menu Snaps & Setups option.

Sending Setup Windows To Your Synth

When you select the MIDI menu Send to Synth... item, a requester will open asking you to confirm your intention to send the active Setup window. Use the QUIT button if you do not want to send the Setup. Once you click on the SEND button, the Setup's individual MIDI files will be sent one by one and the requester will be updated accordingly. If you click on the QUIT button after the "send" has started, The PatchMeister will stop sending the Setup after it has finished sending the current MIDI file.

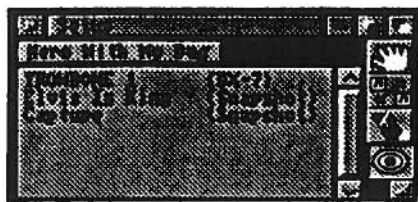
Creating Setups

The remainder of this chapter will explain how to create Setups once you have opened an empty Setup window through selecting the MIDI menu New Setup item.

Notes & Search Keys

If you press the left mouse button while pointing over the Setup's name, you will be presented with a requester displaying the current comment and search key that is associated with this Setup. You may change this text in any way.

NOTE → It's not necessary to add comments and/or search keys to your Setups, but it is highly recommended. The Library menu Find... option can use both of these fields to search through your Libraries and locate matching files. Also, you can use the Library menu Options... item to set the **DISPLAY ALL INFO** view option so that your Libraries display the search key and comment along with the Setup file name.



Setup Editing Buttons

Setups are edited through use of the buttons located on the right-hand side of every Setup window. When you click over one of these buttons, the button will become highlighted and the cursor will change to reflect the edit mode (button) you have just chosen. You will remain in this edit mode until you click over a different button or you click on the same button a second time to shut it off.

The function of each button is described below:



- The **HAND** button allows you to drag filenames into a Setup window or rearrange filenames within a specific Setup window.

You may drag filenames from any Library or Setup window.

SETUPS

If you should elect to drag a filename within one Setup window and drop it past the end of the list, a duplicate filename will be appended to the end of the Setup's filename list.



- The SWAP button allows you to swap selected filenames within or among Setup windows.

Point to a Setup window filename and press the left mouse button as you drag this filename around the screen. Release the left mouse button when you are over the filename that you would like to swap.



- The ERASER button allows you to delete filenames from a specific Setup window.

Press the left mouse button as you point to the filename you want deleted. The filename will be deleted when you release the mouse button.



- The TARGET button provides yet another way to build Setups.

First, select the Setup you want to build by clicking the left mouse button while pointing over the Setup's TARGET button. The button will become selected, indicating that you have just marked *this* Setup as the "TARGET" Setup (or the Setup you wish to update). The pointer will turn into a small target to show that the program is waiting for you to select any filename(s) you want placed into the "TARGET" Setup.

Press the left mouse button as you point to the filename(s) you want copied into the "TARGET" Setup. The selected filename(s) will be appended to the end of the "TARGET" Setup. You may select filenames from any Library or Setup window.

Chapter 11

What are Capture Files?

Capture files contain the MIDI data that is "captured" after a bulk dump is manually initiated from a synthesizer. Because Drivers are not used during the "capture" process, you can "capture" MIDI data from *any synth* that will send a bulk dump when you push one or more of its buttons -- even if it doesn't have a Driver!

Capture files are displayed using the Capture window. These windows look exactly like SysEx file windows except that the word Capture is displayed in each Capture window's title bar.

Opening A Capture Window

There are two (2) ways to open a Capture window:

1. Select the MIDI menu New Capture... item to "capture" a bulk dump from your synthesizer.
2. Double-click on a Capture file's filename in the Snaps & Setup Library to open an existing Capture file.

Capturing A Bulk Dump

The "capture" process begins when you select the MIDI menu New Capture... item.

After selecting this menu item, a requester will open and you will be asked to set the MIDI route and select a buffer size. The MIDI In/Out (Bars&Pipes Professional users), Patch Bay Channel and Patch Bay Program Number are the only MIDI route fields applicable to Capture files.

CAPTURE FILES

Once you have set the route and buffer size, a file requester will ask you to choose a name for the Capture file.

After you select the filename, The PatchMeister will wait for the SysEx data to arrive. At this time, you should instruct your synth to send the bulk dump.



The SysEx data will be written to disk during retrieval, therefore, the Capture file already exists by the time its window opens. The window opens as a courtesy to you, so that you can easily attach a comment and search key to the existing Capture file. If for some reason you do not want to add this information, simply close the window. Otherwise, enter the comment and/or search key and then use the Project menu Save item to save the file with the additional information.

Saving Capture Files

The Project menu Save item can be used to save the active Capture window. Capture files are automatically placed into the Snaps & Setups Library which can be opened by selecting the Library menu Snaps & Setups option.

Sending Capture Windows To Your Synth

Active Capture windows can be sent to your synth in one of two ways: By selecting the MIDI menu Send To Synth item or by clicking over the Capture window's MIDI route gadget. In both cases, the MIDI route

requester will open. Adjust the MIDI route (if necessary) and then click over the requester's SEND button. The contents of the Capture window will be sent to your synth using the designated MIDI route. Remember, the MIDI In/Out (Bars&Pipes Professional users), Patch Bay Channel and Patch Bay Program Number are the only MIDI route fields applicable to Capture files.

Notes & Search Keys

If you like, you may use the two (2) string gadgets to add comments and search keys to your Capture files. This information is used by the Library search and display functions.

MIDI Route

Use this gadget to invoke display of the MIDI route requester. For more information see Chapter Four, "Drivers: Talking To Your Synths."

CAPTURE FILES

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Chapter 12

Using Libraries

Libraries contain information about the other SysEx files that reside within their directories. You never have to be concerned with creating Libraries because they are created (or updated) automatically every time you save or delete a SysEx file. Their job is to keep an accurate record of your PatchMeister files so that you can be provided with a wide range of viewing options whenever you want to browse or search through your SysEx files.

You will notice that the Library window resembles a file requester in that you can traverse through different directories.

Now for a little more information on the actual contents of a Library: Libraries store such data as each MIDI file's name, change date, comment, search key and type(bank, sequence, etc..) Also, each Library pertains to a single Driver, the name of which will appear in that Library window's title bar. For instance, you may have an MT-32 Library, a DX-7 Library or an M-1 Library.

Opening A Library Window

There are two (2) ways to open a Library window:

1. Double-click over a synth's name in The PatchMeister window to open the Library for that synth.
2. Select the Library menu Snaps & Setups item to open the Snaps & Setups Library.

Display Options...

Select the Library menu Options... item if you want to reset the Library window display options. A requester will be opened.

- The first group of requester buttons allow you to select the specific types of SysEx files that you want listed in the window.

Use these buttons to limit the display to the types of files you want to use.

- The DISPLAY ALL INFO button determines how those files will be viewed.

When this button is selected, all information will be shown including the file's comment and search key. Otherwise, just the filename and SysEx type will display in one (1) or two (2) columns, depending on the width of the Library window.

- The requester's cycle button allows you to select the sort order of the items listed in the Library window.

You can choose between Name, Type and Date order.

Search And Locate...

The Library menu Find... option provides the mechanism for searching through your Libraries and locating files with matching search keys.

After you select the Find... item, a small window will open asking you to enter a search key. This search key works in conjunction with the display options outlined above, so that you can have maximum flexibility in specifying which files you want displayed in the window.

After entering a search key, the display of the *last* active Library window will be changed to include only matching items. It will be considered a match if the entered search key is found ANYWHERE within the SysEx file's search key.

You can use the Find window's NOTES field to specify whether you want to include the file comment as part of the search path. The

normal search path of filename and file search key can be extended to include the file comment.

The Library display will be updated each time you enter a new search key. If you clear the search key field (right-Amiga X and then press <ENTER>) all items meeting the Options... criteria will once again be displayed.

To begin using the entered search key in a different Library window, click on that Library window's VOLUME or DRAWER text fields and then press <ENTER>.

The search key will remain in effect until after the Find window is closed.

Printing Libraries

The first thing to keep in mind when you want to print a Library is that you have control over how the Library is going to look on paper! The Library is going to print using the display format that you have chosen for its window. So fine tune the window display based on the guidance outlined under "Display Options" and then select the Project menu Print item. The active Library window will be printed.

Saving Libraries

How do you save a library? Trick question! You really CAN'T save a Library. Libraries are created and maintained automatically every time you save or delete a Bank, SysEx, Snapshot, Setup or Capture file. Banks and SysEx files get saved into their Driver's Library. Snapshots, Setups and Capture files get saved into the Snaps & Setups Library.

LIBRARIES

Rebuilding Libraries

Since Libraries are actually files that contain information about other files residing in their directories, it is possible that they can become out of sync. For example, if you use the CLI to manipulate PatchMeister files, your PatchMeister Libraries may no longer reflect the contents of their directories.

The Library menu Rebuild Library option can be used to resync a PatchMeister Library file with the actual contents of its directory.

To rebuild a specific Library file, open the desired synth's Library window and use the Library window's VOLUME and DRAWER gadgets to enter the name of the directory you suspect is out of sync. Select the Rebuild menu option to recreate the Library.

Deleting Files From Libraries

Click once on a filename and it will become highlighted. Then select the Library menu Delete item. The file will be deleted if you respond "Yes" to the confirmation requester.

Library Window Buttons

The rest of this chapter will discuss the Library window buttons...

Volume Selector

This text field displays the current VOLUME name.

If you would like to change volumes, you can either type in the new volume name or you can click over the NEXT VOLUME button to display the next volume.

Next Volume

Clicking on this button will cause the Library window to display the contents of the next volume.

Drawer Selector

This text field displays the current DRAWER name.

If you would like to change drawers, either key in the new drawer name *or* click over the PARENT button to display the parent directory *or* double-click on any of the drawer names displayed in the Library window.

If you key in the name of a drawer which does not exist, you will be given the option to create a new drawer by that name.

Parent

Clicking over the PARENT button will cause the Library window to display the contents of the parent directory.

Magnifying Glass

MIDI routes are associated with every file. Use the MAGNIFYING GLASS button to view the MIDI route that was saved with a specific file.

Click the left mouse button while pointing over the MAGNIFYING GLASS button. The pointer will turn into a small magnifying glass which indicates that the program is waiting for you to select a file.

Click the left mouse button as you point to a filename and a window will be opened to display the MIDI route that was saved with the file.

LIBRARIES

The **MAGNIFYING GLASS** button will remain selected so that you can view as many MIDI routes as you like. Click on the button a second time to shut it off.

MIDI Route

Use the MIDI route button to send Library files to your synths. Click once on a filename and it will become highlighted. Then click over the MIDI route button to invoke display of the MIDI route requester. The route will default to the MIDI route that was saved with the file. Adjust the route (if necessary) and click on the requester's **SEND** button. The file will be sent using the designated MIDI route. For more information see Chapter Four, "Drivers (Talking To Your Synths.)"

Clipboard

Click on the Library window **CLIPBOARD** button and you will be presented with a requester asking you to enter a search key and choose a Bank type.

After the above has been done, an empty Bank window will be opened, and The PatchMeister will begin searching through files of the selected Bank type looking for items with a matching search key. Matching items will be placed into the Bank window just opened. If any part of the item's name or search key matches the entered search key it will be considered a match.

If you do not enter a search key **EVERYTHING** will be considered a match; however, the screen will flash and make you click over the desired Bank type a second time just to make sure you didn't forget to enter a search key.

Search keys can be attached to each Bank item through use of the **WAND** button in the Bank window.

Chapter 13

Sharing Your Files with Other Programs

The PatchMeister stores SysEx files in a proprietary format. More than likely, the only program that will be able to use files in this format is The PatchMeister. Also, you can be pretty certain that The PatchMeister won't be able to understand the proprietary formats used by other software packages that store SysEx files. This becomes a problem if you want to share files among programs.

The Project menu Import and Export items attempt to bridge this gap by "decoding" proprietary files into simple SysEx data packets to increase the chance they can be shared between programs.

Importing Files (Bring 'Em On In)

In order to use files created by other programs and/or friends, you need a way to get those files into The PatchMeister proprietary format. The Project menu Import item attempts to do just that.

The Driver highlighted in The PatchMeister window will be used for the import. Select the Import menu item to invoke a requester requiring you to select the type of file to import.

After selecting the SysEx type, you will be presented with a file requester allowing you to choose a file to bring into The PatchMeister. Once a window containing the imported file has been opened, you can use the Project menu Save As... item to save the file. Remember, saved files are automatically placed in your Libraries.

You can import any SysEx file that contains raw SysEx data in a packet that can be sent directly to your synth.

IMPORTING AND EXPORTING

The import routine is pretty relentless and will wade through multiple SysEx packets and extraneous data looking for the SysEx you want to import. What's interesting about this is that you can actually extract SysEx packets from Snapshots and Capture files by importing them! This means that if you want to get your hands on an MT-32 Timbre Bank that happens to be inside of a Snapshot file, you can do it! Just click on the MT-32 Driver in The PatchMeister window, select the Import menu item, click over the import requester's Timbre Bank button, and then use the file requester to open that particular Snapshot file. The MT-32 Bank will be extracted.

As long as the file you are trying to import contains the SysEx packet you are looking for in a format that can be sent directly to a synth, you should be able to import it.

Exporting Files (Send 'Em On Out)

The Project menu Export item will allow you to save the contents of the active window in a simplified format for use outside of The PatchMeister program. You can only export Bank and SysEx windows. The exported file will be stripped of all information except raw SysEx data in a packet that can be sent directly to a synth.

Chapter 14

What's A Driver?

So you want to create a Driver? You will need your synthesizer's manual and an adventurous attitude. If you are not an experienced "MIDI-phile," be fair to yourself. Give yourself some time to understand exactly what it is that you are trying to do. It's always fun to learn something new!

Drivers are the very heart and soul of any Universal Librarian. They contain all of the MIDI commands needed to communicate with a given synthesizer. They also contain specific information about an instrument's MIDI files, such as the number of patches in a Bank or the length of a patch name.

If The PatchMeister does not include a Driver for your MIDI instrument, you will have to create one. Otherwise, The PatchMeister will not know how to retrieve, send and process your synth's SysEx files.

The Create Driver Window - An Overview

Before you actually try to build a Driver for your synth, grab a cup of coffee and let's take a high level tour of the Create Driver window...

We'll start by examining an existing driver. Select the Create Driver / Open... command in the Driver menu. Select any driver from the file menu. To make your tour a little more useful, choose a driver for a synth you already have or the one most similar to your synth. Double-click on your choice in the file requester and the Create Driver window should open. If you don't have the synth, you won't be able to execute some of the commands. Just read on and we'll follow with a tutorial on creating your own driver.

DRIVER CREATION

Remember, as you study this window, if you are curious about any button, you can press the Help key, then click on the button with the mouse to call up help text. Don't be intimidated by the plethora of special purpose buttons and fields. Once you enter the tutorial and start to build your own driver, it will all make sense.

SysEx Types

Synthesizers may store more than one (1) type of information. For instance, your synth may contain Tones, Effects, Drum Kits, Performances, or Sequences. Each of these types of information (i.e., Tones, Effects) are stored and processed as a single unit or "packet." You will have to enter information about each type of System Exclusive "packet" that you want The PatchMeister to handle.

The SYSEX TYPES box (located in the upper left-hand corner of the window) lists all of the SYStem EXclusive TYPES that have been entered into the Driver. This box really is the Driver. This concept is important to remember because any changes that you key into the Create Driver window aren't considered part of the Driver until you use the UP ARROW gadget to enter them into the SYSEX TYPES box.

This should make those of you with weak stomachs feel more comfortable. Creating Drivers is an interactive process and The PatchMeister allows you to experiment freely without fear of permanent error. The entire window, with the exception of the SysEx TYPES box, is a playground. You can tweak to your heart's content, and when you find something that works use the UP ARROW to store it in the SYSEX TYPES box.

You can keep pretty busy in this window. However, there are only two (2) ways to change the contents of the Driver you are editing:

1. The UP ARROW button updates the Driver's SYSEX TYPES box with the current values that have been entered into the Create Driver window.
2. The ERASER button allows you to selectively delete SysEx types from the Driver's SYSEX TYPES box.

That's it! All other activity takes place in non-destructive work areas!

MIDI <-> Info

The TOGGLE switch in the top center part of the window causes the top center part of the window to TOGGLE between displaying information specific to MIDI commands and information more general in nature.

Get -> Send -> Audition

The parameters associated with a particular SysEx type can be sub-divided into three (3) categories: Getting SysEx data from your synth (GET FROM SYNTH), sending SysEx data to your synth (SEND TO SYNTH), and auditioning SysEx data (AUDITION) which only pertains to Banks.

The cycle button found in the upper right-hand corner of the window can be used to cycle through each of these categories. If you want to see (or set) the MIDI commands used to SEND SysEx data, click on the cycle button in the upper right-hand corner until it reads SEND TO SYNTH. Now make sure the TOGGLE switch is set to MIDI, and the commands used to SEND SysEx data will appear in the center of the window.

Work Area

The WORK AREA is by far the most useful component of the Create Driver window. After you have entered a minimal amount of

DRIVER CREATION

information detailing how to GET a SysEx type from your synth, you can click on the MIDI IN PORT (or MIDI ROUTE) button to actually GET the SysEx data from your synthesizer. The SysEx will be displayed in the WORK AREA.

The WORK AREA is divided into two (2) parts. The left-hand side displays raw SysEx data in hexadecimal format and the right-hand side displays the corresponding ASCII characters.

Once you are able to GET data into the WORK AREA, there are all kinds of features to help take the strain off your brain. For example, if you hold down the left mouse button while pointing at the SysEx data, the offset of the character you are pointing to will display in the center strip of the window. More noteworthy, the CH, D, N1, N2, CK and KEYBOARD gadgets can help automate the Driver creation process by deriving offsets and sizes from information you have highlighted in the WORK AREA!

For tips on using the WORK AREA to its fullest advantage read the section entitled "How To Create A Driver."

Create Driver Window Gadgets

Now that you have a basic understanding of the window's composition, let's begin a discussion of its individual gadgets. This section will discuss the gadgets that help you navigate through the window and build the Driver.

SysEx Types

As previously mentioned, the SYSEX TYPES box lists the contents of the Driver.

To display the parameters associated with a particular SysEx type, click on that SysEx type's name. To move the values displayed in the Create Driver window into the SYSEX TYPES box, click on the window's UP ARROW button.

Sysex Type Text Field

The SysEx TYPE text field allows you to assign a name to a SysEx type.

If you type in the name of an existing SysEx type, the Create Driver window will display the values associated with that SysEx type.

If you type in a name that doesn't exist, that name will be associated with whatever values are displayed in the window. This means you can clone an existing type by keying in the name of an existing SysEx type, pressing <ENTER>, and then keying a new name into the SysEx TYPE text field.

Up Arrow

When you change parameters in the Create Driver window you are actually updating a scratch pad area of memory. When you are satisfied with your changes, click on the UP ARROW button to move them into the Driver's SYSEX TYPES box and make them part of the Driver.

Trashcan

When you change parameters in this window, you are only altering a scratch pad.

The TRASHCAN button resets the scratch pad work area to its default values. It in no way affects the contents of the Driver you are editing.

DRIVER CREATION

Eraser

The ERASER button allows you to delete specific items from the Driver's SYSEX TYPES list.

Click the left mouse button while pointing over the ERASER button. The pointer will turn into an inverted pencil. Press the left mouse button as you point to the SysEx type you want deleted. It will be deleted when you release the mouse button. Click on the ERASER button a second time to shut it off.

Test-Drive

Click over the TEST DRIVE button when you are ready to give your Driver a test run in The PatchMeister.

The Create Driver window will shrink, and the test Driver will be installed into The PatchMeister window with a name of TEST. Once you click on the installed TEST Driver, you can try out whatever you like with the following exceptions:

1. You can't Save or Export files using the TEST Driver.
2. You can't Remove the TEST driver from the The PatchMeister window.

When you are finished with your test, click on the CONTINUE button located in the Create Driver window. All windows that were opened using the TEST Driver will automatically be closed, and the TEST driver will be removed from The PatchMeister window.

MIDI Route

The MIDI ROUTE button is only available when the window is displaying the GET FROM SYNTH MIDI protocols. This button invokes display of a requester which allows you to view and/or change the default MIDI route that will be associated with *this* Driver.

After you have adjusted the route, you can click on the requester's GET button to make an attempt to retrieve SysEx data from your synth. The SysEx file that is received will be displayed in the WORK AREA portion of the window.

Before you can use the requester's GET button, you must enter a MIDI command to GET data and fill in all of the text fields located on the far right-hand side of the window (CH OFST, CHAN MN, CHAN MX, SIZE.) PATCH # MN and MX may also be required if the command to GET data contains a "-P."

Midi In Port

The MIDI IN PORT button is only available when the window is displaying the GET FROM SYNTH MIDI protocols. After you have set the route using the MIDI ROUTE button, you can use this button when you want to try and GET SysEx data from your synth. The MIDI IN PORT button does everything the MIDI route requester's GET button does except bother you with the MIDI route requester.

Toggle Switch

Use this TOGGLE SWITCH to display either MIDI protocol information or general information.

Category

The parameters associated with a particular SysEx type can be sub-divided into three (3) categories: Getting SysEx data from your synth (GET FROM SYNTH), sending SysEx data to your synth (SEND TO SYNTH), and auditioning SysEx data (AUDITION.) Use this cycle button to select the category you want to view/edit in the Create Driver window.

DRIVER CREATION

Question Mark Button Overview

The CH, D, N1, N2 and CK gadgets allow you to highlight different components of the SysEx data being displaying within the WORK AREA. Once these components have been highlighted, you can click on the various QUESTION MARK gadgets located throughout the window. Each time you click on a QUESTION MARK, its associated string gadgets will be updated with offsets and counts based on the highlighted fields.

Question Mark (Name Fields)

Use this QUESTION MARK button AFTER using the D and N1 gadgets to highlight the Data and 1st Name portions of the SysEx file displaying in the window's WORK AREA.

If the SysEx data from your synth is NOT in the STANDARD FORMAT, you must "decode" it prior to using this button. For more information on this topic read about the KEYBOARD button.

The following fields will be populated when you click on this QUESTION MARK:

- Name Ofst
- Name Size

Question Mark (Bank Fields)

Use this QUESTION MARK button AFTER using the D, N1 and N2 gadgets to highlight the Data, 1st Name and 2nd Name portions of the SysEx packet displaying in the window's WORK AREA.

If the SysEx data from your synth is NOT in the STANDARD FORMAT, you must "decode" it prior to using this button. For more information on this topic read about the KEYBOARD button.

The following fields will be filled in when you click on this QUESTION MARK:

- Bank Number of Items
- Bank Item Size
- File Type cycle button will switch to BANK

Question Mark (Check Sum And Data Offsets)

Use this QUESTION MARK button AFTER using the CH, D, and CK gadgets to highlight the MIDI Channel, Data and Check Sum portions of the SysEx packet displayed in the window's WORK AREA.

This button will only work when the SysEx packet is being displayed in the same format that it was in when your synth sent it. For more information on this topic, read about the KEYBOARD button.

The following fields will be populated when you click on this QUESTION MARK:

- Data Start
- MIDI Channel Ofst
- Data Stop
- SysEx File Size
- Check Sum Ofst

DRIVER CREATION

Ch, D, N1, N2, Ck Overview

The CH, D, N1, N2 and CK gadgets allow you to highlight different components of the SysEx data being displaying within the WORK AREA.

After clicking on one of these buttons, the pointer will change and a prompt will appear in the center strip of the window. Hold down the left mouse button while you are pointing over the SysEx data that is displayed in the WORK AREA. As you move the mouse, the current offset will display. Release the mouse button when you are over the position (offset) that satisfies the prompt's request.

Each of these gadgets will prompt you to highlight a different part of the SysEx packet. Once the fields have been highlighted, you can click on the various QUESTION MARK gadgets located throughout the window. Each time you click on a QUESTION MARK, its associated string gadgets will be updated with offsets and counts based on the highlighted fields.

CH

The CH (MIDI Channel) button can be used to define the location of the MIDI channel.

D

The D (Data) button can be used to define the first and last characters of the Data portion of the SysEx file.

If the SysEx packet has a checksum, the first character should be the first character included in the checksum calculation and the second character should be the last character included in the checksum calculation.

NOTE → Remember, the file displayed in the **WORK AREA** will more than likely start with some header information that is **NOT** part of the actual SysEx data. Refer to your synth manual's System Exclusive charts for more information.

N1

The N1 (First Name) field can be used to define the first and last characters of the first Name in the SysEx data. Some SysEx files do not contain Names. Banks contain more than one Name. The N1 field is concerned with highlighting the first Name in a Bank, or the one and only Name in those files that contain a Name.

First, if the data from your synth is **NOT** in the **STANDARD FORMAT**, use the **FILE FORMAT** cycle button to select the proper format. Then use the window's **KEYBOARD** button to "decode" the SysEx packet that is displaying in the **WORK AREA**.

You will be prompted to highlight the first and last characters of the name. It should be easy to find the name if you look at the ASCII (right-hand) side of the **WORK AREA** (unless the name is in D-50 or PACKED 7 format.) If the name is in D-50 or PACKED 7 format, you will not be able to read the name and you will have to rely on offsets.

N2

The N2 (Second Name) field can be used to define the first character of the 2nd Name in a SysEx packet. Only Banks contain more than one name. The N2 field is only concerned with highlighting the 2nd Name in a Bank.

This field acts just like the N1 field with the exception that you will only be asked to highlight the first character of the name.

DRIVER CREATION

CK

The CK (Check Sum) field can be used to define the location of the SysEx packet's Check Sum.

Keyboard

Your synth just might send its SysEx data to your Amiga in a non-standard format. If this is the case, you must use the FILE FORMAT cycle button (at the top of the window) to specify the format it uses when transmitting files. This is necessary because its SysEx files will have to be "decoded" before The PatchMeister can use them.

The KEYBOARD button allows you to try out the different file format conversion routines. Whenever the KEYBOARD is displaying, you are looking at the raw SysEx data that was sent from your synth. Whenever the DECODED image is displaying, you are looking at the SysEx file after it has been "decoded" by the routine specified in the FILE FORMAT cycle button.

Use of the QUESTION MARK buttons which calc the NAME and BANK fields will require that the SysEx data be "decoded."

Use of the QUESTION MARK button which calcs the CHKSUM and DATA offsets will require that the SysEx data be "coded" (in the format sent by your synth.)

Cycle Button Parameters

This section will discuss the various cycle buttons that are used to set the Driver's parameters.

We will not attempt to provide a complete explanation for every setting of each cycle button. The on-line help system does that (See

Chapter 5, "Help!") We will, however, discuss the purpose of each button and list its possible settings within parentheses.

Commands

Use this cycle button to indicate whether or not you must perform an action at your synth prior to sending or receiving SysEx data. Some synths require that SysEx dumps be initiated manually while others must be placed into a particular "mode" before the communications can be successful. (COMMANDS, MANUAL, PROMPTS)

Roland: Ami

This cycle button is only available with Roland handshaking. Use it to designate whether Roland RQD handshaking is to be initiated by your Amiga or by your Roland synth. (AMI, ROL)

File -or- Bank

This cycle button must specify whether this SysEx type is a File or a Bank. A Bank will be sub-divided into a fixed number of fixed length items and will be displayed using the Bank window. (FILE, BANK)

RAM -or- ROM

Use this cycle button to specify whether or not this SysEx type is retrieved from RAM or ROM. The more common setting of this cycle button will be RAM. (RAM, ROM)

Handshake

MIDI instruments communicate in different ways. Some synths are simple. If a computer sends them a SysEx packet they can readily receive it. Other instruments are very formal about the whole

DRIVER CREATION

procedure. If a computer wants to send them data, the computer must initiate the whole process by saying, "Hey, I want to send you something." After the synth replies, "Okay, I'm ready," the computer sends the data. When the synth is finished receiving the SysEx packet, it replies, "Thank you, would you like to send anything else?" The computer replies, "No," and the synth says, "Okay, good bye." This process is called handshaking.

Use this cycle button to indicate which handshaking protocols are used by your synth. (NO HANDSHAKE, ROLAND RQ1 OR RQD, CASIO CZ SHAKE, SIMPLE SHAKE)

File Format

Some synths store their SysEx packets in a compact way that cannot be transmitted over MIDI. When you request data from these instruments, they have to convert their SysEx data into a format that can be transmitted over MIDI prior to the send. When your Amiga receives these "coded" packets they have to be "decoded" before The PatchMeister can process them.

Use this cycle button to indicate the data format being used when your synth sends SysEx files. (STANDARD FORMAT, NIBBLE HI/LO, NIBBLE LO/HI, KORG M1, 8-BIT -> 7-BIT)

NOTE ➔ The System Exclusive layouts in your manual are based on 'decoded' SysEx packets!

Name Format

Synth's may also store patch names in various formats. This cycle button should indicate the format being used by your synth. (ASCII, ADD NAMES, D-50, PACKED 7)

Number Format

Synths use different numbering schemes for the patches in their Banks. Use this cycle button to assign a numbering scheme to the patches in a particular Bank. The choice is purely cosmetic, so when in doubt just use the default of 1,2,3...! (1,2,3..., 0,1,2..., 1-1 ->1-8, A-1 ->A-8, A00->A99, A11->A18.)

Checksum Method

Check sums are used to validate the integrity of a SysEx packet. Synths use different algorithms to calculate their check sums. Use this cycle button to specify the check sum algorithm used by your synth. (2'S COMP, NONE, SUM BYTES, NIBBLE 1, NIBBLE 2, KAWAI K1)

Checksum Place

SysEx files usually contain one checksum per packet, but you may find that your synth requires that a separate check sum be calculated for each patch within a single packet Bank. Use this cycle button to indicate how your synth stores check sums. (FILE OFST, ITEM OFST)

Fixed -or- Max

Use this cycle button to indicate whether or not the size of this SysEx file is fixed or variable. If the size varies, the value entered into the file Size string button must be its maximum size. (FILE, MAX)

F0...F7

Use this cycle button to indicate whether or not this SysEx file begins with a hex F0 and ends with a hex F7. (F0...F7, F0.....,F7,)

DRIVER CREATION

Text Parameters

This section will discuss the various text fields that are used to set the Driver's parameters.

Many of these fields require that you enter offsets. All offsets are to be calculated from the first character of the SysEx file that is received from your synth unless otherwise noted.

NOTE → When you are trying to figure out an offset, locate your starting pointing and begin counting with ZERO! Don't forget that if you click on a character in the WORK AREA, its offset (from the beginning of the SysEx file) will be displayed in the center strip of the window.

The numeric string gadgets will always display a decimal number. If you wish to enter a hexadecimal value, simply key the letter H after the number. The hexadecimal number will automatically be converted to display in decimal; i.e., 1aH, 23h, 4FH will be considered hexadecimal values and will be converted into a decimal number.

MIDI Commands

The three (3) string gadgets in the center of the window store the MIDI commands that are to be used for the action specified by the GET FROM SYNTH - SEND TO SYNTH - AUDITION cycle button.

The FIRST and LAST lines can be used to store additional MIDI commands that will be sent BEFORE and AFTER the command entered on the CENTER line. For example, you may need to enter a command on the FIRST line that will prepare your synth so that the command entered on the CENTER line will work properly. Or you may need to enter a Program Change command (C0 00) on the LAST line so that a patch sent by the CENTER line of an AUDITION command can be heard.

DRIVER CREATION

All commands must be entered as hex bytes separated by spaces. For example, the command to retrieve a Voice Bank from a DX-7 would be entered as follows:

==> F0 43 20 09 F7.

All commands must be entered with a MIDI channel of zero. The SysEx MIDI channel associated with the window will be substituted when the command is actually sent to your synth.

There are four (4) special character combinations that you can use when entering MIDI commands: "-P," "-D," "-E," and "PC." A brief discussion follows.

If the MIDI command you are entering must allow for PATCH NUMBER substitution, use a "-P" to show where the PATCH NUMBER should be placed. For example, the command to get a memory location from an SPX-90 would be ==> F0 43 20 7E 4C 4D 20 20 38 33 33 32 4D -P F7. The "-P" will later be replaced with the actual memory location (patch) you wish to receive. If a command contains a "-P," you will be expected to enter the minimum and maximum values that can be used for the "-P" substitution (see PATCH # MN and MX string gadgets.)

When entering the command to SEND DATA TO YOUR SYNTH, use a "-D" to show where the SysEx data must reside for the SEND, and use a "-E" to show where the checksum must be placed (if applicable.) For example, the command to send a Voice Bank to a DX-7 would be entered as follows ==> F0 43 00 09 20 00 -D -E F7.

A value of "PC" entered on the CENTER line of the AUDITION command will cause Program Change commands to be used for the auditioning process.

DRIVER CREATION

Roland : Inc

A Roland synth may send its Banks one item at a time. When this is the case, the header portion of the MIDI command will store a target address (destination) which has to be incremented as each Bank item is sent.

This text field is only available for Banks that use Roland handshaking. If the Roland Bank must send its items one at a time, use this field to store the Roland Address Increment value.

The Roland: Inc must be entered as hex bytes separated by spaces: i.e., 00 02 00. In the previous example, 00 02 00 will be added to the target address after each Bank item is transmitted. If the first Bank item is sent to address 08 00 00, the second Bank item will be sent to address 08 02 00, the third to address 08 04 00, etc.

Location: Loc (Offset And Size)

If a Bank or a File can be sent to more than one destination in a given synth, use this text field to enter the OFFSET within the SEND command that is used to designate the DESTINATION. The text field on the right should contain the NUMBER OF BYTES used to specify the DESTINATION in the SEND command.

Proper use of these fields will allow you to swap patches among like Banks that you have retrieved from different locations. It will also allow you to send a SysEx packet retrieved from one location to another.

Patch #: Mn And Mx

If the entered MIDI command must allow for patch number substitution it will contain a "-P" to show where the patch number should be placed.

If a command contains a "-P," you will be expected to use these text fields to enter the MINIMUM and MAXIMUM values that can be used for the "-P" PATCH NUMBER substitution.

If the command does not require a patch number, these fields should be set to "Off."

Checksum: Start And Stop

These fields store the OFFSETs of the first and last characters which should be included in the Checksum calculation. In most cases, these OFFSETs will coincide with the first and last data bytes.

If the SysEx does not contain a check sum, these fields should store the OFFSETs of the first and last characters of the data portion of the SysEx file.

Check Sum: Ofst

This field stores the OFFSET of the CHECKSUM in the SysEx file. The CHECKSUM will more than likely be found in the trailer portion of the file.

If you have selected the ITEM OFST option (required by some Banks), the entered value should be an OFFSET within the first bank item. If your Bank item size is 100, 0 thru 99 will be considered valid values.

File: Ch Ofst

This field stores the OFFSET of the MIDI CHANNEL in the SysEx file. The MIDI CHANNEL will more than likely be found in the header portion of the file.

If the SysEx command does not require a channel number, this field should be set to "Off."

DRIVER CREATION

File: Chan Mn And Chan Mx

Use these fields to enter the MINIMUM and MAXIMUM values that may be used for the MIDI CHANNEL during SysEx communications.

File: Size

This field stores the LENGTH of the entire SysEx PACKET, including the header and trailer portions of the file.

Banks transmit their items (patches) in one of two (2) ways:

1. The entire Bank is sent as a single packet of SysEx data, in which case the SIZE string gadget would store the LENGTH of the entire Bank plus the size of the header and trailer, i.e. | Header | Item 1, Item 2, Item 3... | Trailer |
2. The Bank is sent one item at a time, in which case the SIZE string gadget would store the LENGTH of one Bank item plus the size of its header and trailer, i.e. Header | Item 1 | Trailer | | Header | Item 2 | Trailer | etc.

Name: Ofst

This field stores the OFFSET of the 1st character in the first (or only) NAME field. This OFFSET is from the beginning of the DATA PORTION of the SysEx file, not from the beginning of the file itself.

Name: Size

This field stores the LENGTH of the NAME field. A length of zero indicates that the SysEx packet does not contain a NAME.

Bank: Items

This field stores the NUMBER of PATCHES in a BANK.

Bank: Size

This string gadget stores the **SIZE** (length) of each **PATCH** in a **BANK**.

How To Create A Driver

Please take the time to become familiar with the first few sections of this chapter. This tutorial assumes that you have a basic understanding of how the Create Driver window functions. We trust that you will refer to the previous sections if you need more information on a specific button.

Since every synth is different, every Driver you create will have its own peculiarities. This tutorial could never cover all the possibilities. It will, however, suggest some basic guidelines that will help you take your first steps toward building your own Driver.

Creating Drivers is an interactive process. Don't be intimidated! Try this, try that - you will be learning as you go. The PatchMeister will provide you with plenty of visual feedback to help you along the way!

Now the fun begins...

Look Through Your Synth's Manual

Grab your synthesizer's manual and look for information on its "System Exclusive" implementation. You might find this information within a section called "MIDI Specifications," or "MIDI Implementation" or "MIDI Data Formats." Once you find the place in your synth's manual that talks about MIDI, start looking for the word "Exclusive."

Now read about your synth's "System Exclusives," but don't expect to understand everything after one reading. Look for a command that

DRIVER CREATION

will GET something from your synth and any information you can find on "System Exclusive" MIDI channels.

Inventory time... You need a command to GET data. You need to know where that command stores its MIDI channel. You need to know the range of values used for your synth's "System Exclusive" MIDI channels.

The MIDI channel range for most synths will be 1 thru 16, and the MIDI channel will more than likely be in the third position of the MIDI command. This means the channel will have an offset of two (2.) You can at least make intelligent guesses about the command's MIDI channel if you have to.

Once you have a complete inventory, you can proceed to the next step...

Enter "Required" Parameters

Select the Driver menu Create Driver - New option. A requester will open asking you to key in your synth's manufacturer and name. Of course you would normally want to choose the CREATE FROM COPY option so that you can use an existing Driver as a base, but for purposes of this tutorial click on the CREATE FROM DEFAULTS button. The Create Driver window will be opened.

Make sure the cycle button in the upper right-hand corner reads GET FROM SYNTH and the window's TOGGLE switch is set to MIDI.

Your first goal is to get something (anything!) into the WORK AREA when you click on the MIDI IN PORT button. You will need to enter a minimal amount of information so that you can use the MIDI IN PORT button successfully.

Let the cursor walk you through the required fields. Enter a name for this SysEx packet in the SysEx TYPES string gadget (i.e., Tone Bank,

Drums), and then press <ENTER> twice. The cursor should be on the CENTER command line. Refer to your manual and key in the command that will GET data from your synth and press <ENTER> three (3) times. The cursor should be at the CH OFST field.

Enter appropriate values in the CH OFST, CHAN MN, CHAN MX and SIZE fields. Don't be too concerned with entering the exact SIZE of the file that you will be receiving, you can adjust it later. Try a SIZE of 500. That's it!

Now, we will have to establish a MIDI route to the synth that will be using this Driver. Click on the MIDI ROUTE button and then adjust the requester's route to match the MIDI route of your synth. Click on the requester's ROUTE button when you are finished.

See What You "Get"

Click on the MIDI IN PORT gadget. Skip to the next section if ANYTHING is displaying in the WORK AREA.

If nothing has appeared in the WORK AREA its time to experiment.

First let's check the hardware. Check your MIDI cables. If you have a serial pass thru make sure it is set to MIDI. Is your synth set up to receive and transmit SysEx? Some synths have MIDI disabled when they are shipped!

Verify that your MIDI route has been set up correctly. Is your synth set up to expect SysEx messages on the S-CH channel that you have specified in your MIDI route? Can you hear anything when you type letters on your Amiga keyboard? (See Chapter 6, "Auditioning Sounds.")

Now its time to validate the fields that you have entered in the window. Has the command to GET data been entered properly? How about the MIDI channel offset?

DRIVER CREATION

Once you are comfortable that everything has been set up properly, click on the MIDI IN PORT button once more. Skip to the next section if ANYTHING is displaying in the WORK AREA.

Still nothing? Look through your synth's manual for clues. Don't ignore the footnotes that are usually written in very, very small print. They usually contain the most useful information!

Does your synth use handshaking? If yes, you will have to use the HANDSHAKE cycle button to specify which handshaking method is used.

Does the GET command only work when your synth is in a specific mode? If so, can you use the FIRST command line to enter another MIDI command that will prepare your synth to receive the GET command? Do you have to push some buttons on your synth to get into the desired mode?

Where there's a will there's a way! Keep trying until you get something to display in the WORK AREA.

What Should I Do With The Work Area?

Congratulations! You are probably scratching your head and looking at some pretty meaningless characters in your window.

All synths have unique features. This tutorial would only confuse the issue if it were to begin discussing exceptions and quirks before you have developed a basic understanding of "standard" SysEx communications.

From this point forward, this tutorial will assume that you are dealing with the most common type of SysEx communications: "Standard" SysEx packets that begin with an F0 and end with an F7. Once you understand the principles outlined below, they can be applied to help you create Drivers for synths a bit different from the norm.

Back To The Work Area...

- 1) Find The SysEx Packet

Our first goal is to get the SysEx to display in the WORK AREA without the message 'Expected SysEx not received!'. To do this we must figure out the correct file SIZE.

First of all, you should be looking at the exact number of characters that you specified in the file SIZE field. To verify this, click on the very first character and an offset of 0 will display. Now use the scroll bar to get to the end of the SysEx data and click on the very last character. An offset of 499 will display.

NOTE → Offsets begin counting with 0 (not 1), so you can expect that the last character will always have an offset that is 1 less than the file SIZE you have entered. Try clicking on the MIDI IN PORT after changing the file SIZE to 300 and you will see that the last character has an offset of 299.

If the SysEx packet you have retrieved is only 50 character long, you are obviously going to be looking at 250 extra characters (based on a file SIZE of 300.) If this is the case, the extra characters will show as 00s on the left and dots on the right.

If the SysEx packet contains 1000 characters, your display will be missing its last 700 characters. Your synth's manual may contain the size of the SysEx packet you have just received. If so, you can certainly enter it into the SIZE string gadget. But if it is not clear to you what size to enter, read on...

This is a visual explanation of what will be discussed:

- F04200009380472230004F700000000 ==> File SIZE is too large.
- F042000093804722300 ==> File SIZE is too small.

DRIVER CREATION

- F04200009380472230004F7 ==> File SIZE is perfect!

"Standard" SysEx packets begin with a hex F0 and end with a hex F7. Look for the F0' and 'F7 in the left-hand side of the WORK AREA. The F0 should be the first character (offset 0.) Now look for the F7. Use the scroll bar to get to the end of the display.

Are you staring at a bunch of 00s on the left and dots on the right? If so, the SysEx packet is probably smaller than the file SIZE you have entered. You can either enter a smaller file SIZE and click on the MIDI IN PORT button, or you can scroll backwards until you find the F7. The F7 should be the last non 00 character in the left-hand side of the WORK AREA.

If the end of the SysEx packet is missing (i.e., no F7) you will have to experiment with larger file SIZES until you are able to capture the entire SysEx packet.

Once you have found the F7 that marks the end of the packet, click on it to find out its offset. Add 1 to its offset and that is the value that you need to enter into the file SIZE string gadget!

Now you should be able to use the MIDI IN PORT button without receiving any error messages.

- 2) Enter The Send Command

Before you go any further you will have to enter the MIDI command that will SEND this SysEx packet back to your synth. When you request SysEx from a synth, it usually sends you a packet that you can immediately turn around and SEND back to your synth. Use this knowledge to your advantage.

A "standard" SysEx packet displaying in your WORK AREA is comprised of three (3) parts:

<i>Header</i>	<i>Data</i>	<i>Trailer</i>
FO ?? ?? ??	-D	-E F7

<—= Entered SEND command

When you enter a SEND command you will key in the entire Header portion. The length of the Header will vary. You will use a -D to represent the Data portion, a -E (if applicable) to represent the file's check sum, and of course you will end a "standard" SEND command with an F7.

When you look through your synth's manual for the SEND command, you can narrow the search by looking for a command whose Header portion matches the Header that is displayed in your WORK AREA. Your synth's manual can help you determine the header length and whether the packet contains a check sum. Make sure the cycle button in the upper-right hand corner of the window reads SEND TO SYNTH when you key in the SEND command.

• 3) Highlight The Data And Checksum

Use the D and CK buttons to highlight the SysEx packet's Data portion and check sum (if present.) A complete explanation of these buttons can be found within the section entitled CREATE DRIVER WINDOW GADGETS.

If the packet doesn't have a check sum, make sure the CHECK SUM METHOD cycle button is set to NONE.

Now you can click on the QUESTION MARK button in the upper right-hand corner of the window and the check sum START, STOP and OFST fields will be filled in.

• 4) Determine The File Format

To make a long story short, some synths store their SysEx packets in a compact way that cannot be transmitted over MIDI. When you request data from these instruments, they have to convert their SysEx data into

DRIVER CREATION

a format that can be transmitted over MIDI prior to the send. When your Amiga receives these "coded" packets they have to be "decoded" before The PatchMeister can process them.

The remainder of this section only applies to synths that send "coded" packets!! If your synth sends files in the STANDARD FORMAT you can skip to the next section.

The System Exclusive layouts in your manual are showing you "decoded" SysEx packets; if you want to compare a "coded" WORK AREA display to its manual layout you will have to "decode" it.

Make sure the window's TOGGLE switch is set to INFO.

Click on the FILE FORMAT cycle button and you will cycle through the various "decode" routines. Select the "decode" routine used by your synth.

Click on the KEYBOARD button to "decode" the SysEx packet. Click on the KEYBOARD button's alternate image to redisplay the "coded" packet.

The images chosen for this button are significant. When the keyboard image is displayed, you are looking at the actual SysEx packet received from your keyboard ("coded.") When the button's alternate image is displayed, you are looking at a SysEx packet that has been processed through one of the FILE FORMAT routines ("decoded.")

If your SysEx packet really is "coded," chances are that one of the "decode" routines will cause readable patch name(s) to suddenly appear on the right-hand side of the WORK AREA display. If this should happen, you have stumbled across the correct "decode" routine! Of course your synth's manual will contain clues to help you pick a "decode" routine, but sometimes a manual can be confusing and it's always nice to have visual confirmation.

Don't forget to reset the FILE FORMAT cycle button to STANDARD FORMAT if your synth does not send "coded" SysEx packets!

- 5) Highlight The Data And Name(S)

If you like, you can use the D, N1 and N2 gadgets to help you fill in the Name and Bank string gadgets. If your synth is not sending its SysEx files in the STANDARD FORMAT, make sure you have "decoded" the packet displaying in the WORK AREA before doing this!

A complete explanation of these gadgets can be found within the section, CREATE DRIVER WINDOW GADGETS.

If you are creating a Driver for a Bank which sends it items one at a time, the WORK AREA will only contain one patch. This means you will have to fill in the Bank string gadgets manually.

Take A Test Drive

Before you perform a full-fledged test on your Driver, make sure all of the cycle buttons have been set correctly. Use the Help System if you don't understand what some of the options mean. Pay particular attention to the HANDSHAKE, FILE FORMAT, NAME FORMAT, CHECK SUM METHOD and CHECK SUM PLACE cycle buttons. You won't get very far if these gadgets are set incorrectly.

Use the UP ARROW to move the values displayed in the window into the SYSEX TYPES box.

DRIVER CREATION

NOTE → Until this point in time you have been updating a scratch pad area of memory. You must use the **UP ARROW** button to place the changes you have made into the Driver. Refer to Appendix B if you should happen to receive an error message when you try to use the **UP ARROW** button.

Click on the **TEST DRIVE** button to try out your Driver! When you are finished with your test, click on the **CONTINUE** button.

Save The Driver

When your Driver works the way you want it to, use the Project menu **Save As...** item to save it to disk.

Chapter 15

The PatchMeister Accessory

In addition to running as a stand-alone patch librarian, you can integrate The PatchMeister with both SuperJAM! and Bars&Pipes Professional, further expanding the power and capabilities of each program. Once you integrate The PatchMeister with either program, you can easily configure and organize your synthesizers while concentrating on your composition.

The PatchMeister Accessory is a special version of The PatchMeister that can be loaded directly into Bars&Pipes Professional or SuperJAM! This version integrates directly into the screen of the parent program and communicates directly with it, sharing resources such as the MIDI interface. Simply pull The PatchMeister into Bars&Pipes Professional or SuperJAM! by loading this Accessory into the Accessories window of either program. You will find The PatchMeister Accessory under the name, "The PatchMeister.paccess."

Installation

Load The PatchMeister Accessory into SuperJAM! or Bars&Pipes Professional with the Load... command in the Accessories menu of either program. (Please see the SuperJAM! or Bars&Pipes Professional manual for further information on loading Accessories.)

Once The PatchMeister is loaded as an Accessory, it displays its icon in the Accessories window. To open The PatchMeister window, double click on The PatchMeister icon.

BARS&PIPES PROFESSIONAL AND SUPERJAM!

NOTE → Closing The PatchMeister window by selecting Quit from the Project menu does not completely close The PatchMeister. Instead, it only closes all of The PatchMeister's windows. Double-click on The PatchMeister's icon in the Accessories window to reopen it. To remove The PatchMeister, you must use the Remove command in the Accessories menu.

Bars&Pipes Professional

To facilitate integration with Bars&Pipes Professional, The PatchMeister Accessory comes with an extra menu, B&P Pro. This menu contains two options. The first, All To Back, sends all The PatchMeister windows to the back. When selected a second time, this brings them all to the front. The second option, Auto Load, controls the integration of librarian files with Bars&Pipes Professional songs. You can select any file from any library to include with your Bars&Pipes Professional performance. When that composition is loaded, Bars&Pipes Professional hands the file name to The PatchMeister, which in turn broadcasts it to your synths. As a result, your MIDI setup is automatically rearranged for each song you load! Please see Chapter 3, menus for a complete description of the Auto Load command.

If you are running Bars&Pipes Professional 1.1 or higher, The PatchMeister can also install a Patch List (created from any Bank window) in Bars&Pipes Professional. These Patch lists can be used by the Program Change requester in Bars&Pipes Professional to select a patch by name. The Transfer Patch List command in the Bank menu copies the currently selected Bank into Bars&Pipes Professional.

BARS&PIPES PROFESSIONAL AND SUPERJAM!

SuperJAM!

To facilitate integration with SuperJAM!, The PatchMeister Accessory comes with an extra menu, SuperJAM!. This menu contains one option: All To Back. This sends all The PatchMeister windows to the back. When selected a second time, it brings them to the forefront.

You can also create new patch list files for SuperJAM! to install in its Patch window with the Save Patch List command in the Bank menu.

Complete Integration

Because the SuperJAM! Accessory also loads into Bars&Pipes Professional, you can integrate all three programs for the ultimate in musical power and creativity! Use SuperJAM! to generate music, Bars&Pipes Professional to record, edit, and produce it, and The PatchMeister to organize the orchestration.

Remember, because both Bars&Pipes Professional, The PatchMeister, and SuperJAM! all require at least one megabyte of memory in order to run, you'll need at least two megabytes of memory to run any combination.

BARS&PIPES PROFESSIONAL AND SUPERJAM!

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Appendix A

Shortcuts and Guidelines

The following is a tour of the Amiga keyboard as it relates to The PatchMeister:

A Tour of the Keys

Various keys on the Amiga keyboard have been programmed to generate "Note On" commands:

23 567 90 =\
QWERTYUIOP[]

will generate pitches:

CDEFGAB CDEFG

and

SD GHJ L;
ZXCVBNM,./

will generate pitches:

CDEFGAB CDE.

The numeric keypad is used to change the loudness of the notes being generated by the keys listed above.

7 8 9
4 5 6 (Located to the right of
1 2 3 the Amiga keyboard.)
0

USING THE AMIGA KEYBOARD

When used in conjunction with the SHIFT key, the numeric keypad will alter the octave being used for the generated notes.

ESC

is used to turn off hanging notes.

HELP

Invokes the "Help System".

Menu Shortcuts

To use the following menu shortcuts, hold down the right Amiga key while pressing one of the keys listed below:

Project Menu:

S Save A Save As... E Export... I
Import... P Print Q Quit

Bank Menu:

V View N New Bank / Compress
Bank C Clear Items Z Undo

Library Menu:

O Options... F Find... D Delete U
Snaps & Setups

Driver Menu:

B Bring to Front / Send to Back

MIDI Menu:

G Get from Synth... T Send to
Synth... [New Snapshot...]
New Setup ; New Capture...

Appendix B

A Listing of Error Messages

Use the following descriptions to troubleshoot The PatchMeister:

»» XXXXXXXXX must be < FileSize! ««

The value entered into the specified string gadget must be less than the value that was entered into the file SIZE string gadget.

»» XXXXXXXXX is not highlighted! ««

The specified field has not been highlighted in the »» WORK AREA ««. Use the CH, D, N1, N2 or CK gadget to highlight the required field.

»» Can only use ADD NAMES with BANKS! ««

»» Can only use ITEM OFST with BANKS! ««

»» Can only use MAX with FILES! ««

»» Can only use MAX with F0..F7, ..F7! ««

Certain cycle gadget combinations are invalid. The error text points out the particular options that are in conflict.

»» Can't Insert SysExType of spaces! ««

You must use the SysEx TYPES string gadget to assign a name to this SysEx type.

»» Can't use -D on this line! ««

You can only use a -D on the CENTER command line.

DRIVER CREATION ERROR MESSAGES

»» *Chan Max must be > Chan Min!* ««

Maximum values should always be greater than minimum values!

»» *ChksumStart must be < ChksumStop!* ««

These string gadgets should contain the offsets of the first and last characters that are to be included in the check sum calculation. The starting place must be before the ending place!

»» *Driver must have SysExType(s)!* ««

You cannot SAVE an empty Driver. You must have at least one (1) item in the »» SysEx TYPES «« box.

»» *FileSize must = HDR + DATA + TRLR!* ««

Header size = Number of bytes before the SEND command's -D; i.e. F0 43 00 00 01 1B -D -E F7 Header size = 6.

Data Size = value in check sum STOP - Header size + 1; i.e. F0 43 00 00 01 1B -D -E F7 check sum STOP is 160 Data size = 155.

Trailer Size = Number of bytes after the SEND command's -D; i.e. F0 43 00 00 01 1B -D -E F7 Trailer size = 2.

The file SIZE string gadget must contain a value that is equal to the Header Size + Data Size + Trailer Size. In our example above the file SIZE must be 163, which is 6 + 155 + 2. You will have to adjust the file SIZE -or- check sum STOP accordingly.

DRIVER CREATION ERROR MESSAGES

»» GET Command has not been entered! ««

»» SEND Command has not been entered! ««

The specified command is missing. The PatchMeister expects that the CENTER command line will contain the command which actually GETS or SENDS the SysEx data.

»» Invalid decimal number! (0-9) ««

You have entered an illegal character in the active string gadget. Decimal numbers can only contain the numbers 0 thru 9.

»» Invalid hex number! (0-9 and A-F) ««

»» Invalid hex string! (0-9 and A-F) ««

You have entered an illegal character in the active string gadget. Hex fields can only contain the numbers 0 thru 9, and the letters A thru F.

»» Loc + LocSize must be before -D! ««

The range of bytes designated by the LOC offset and size must be occur before the SEND command's -D.

»» MAX files must use STANDARD FORMAT! ««

Variable length files cannot be "decoded". They must be processed as STANDARD FORMAT files even if they are "coded". This is because variable length files are usually made up of many segments, and not all of the segments are "coded" the same way.

»» Name 1 must fall within SysEx Data! ««

The name must be located within the Data portion of the SysEx packet.

DRIVER CREATION ERROR MESSAGES

»» Name 2 must be after Name 1! ««

The 2nd name in a Bank must be located after the 1st name in a Bank. The 1st name belongs to the first patch, the 2nd name belongs to the second patch.

»» NameOfst + NameSize > FileSize! ««

The range of bytes designated by the name OFST and SIZE string gadgets must fall within the Data portion of the SysEx packet.

»» NameOfst + NameSize > ItemSize! ««

The range of bytes designated by the name OFST and SIZE string gadgets must fall within the first Bank item.

»» Number must be between 0 and 127! ««

An illegal value has been entered into the active string gadget. The value must be changed so that it is between 0 and 127.

»» NameSize required when Ofst > zero! ««

The name SIZE must be greater than zero when a name OFST has been entered.

»» NbrItems * ItemSize > FileSize! ««

If a Bank has 64 items and each item is 256 bytes long the entire SysEx packet can't have a file SIZE of only 300 bytes! The file SIZE must be at least $64 * 256$ (which is 16,384), plus the size of the Header and Trailer.

DRIVER CREATION ERROR MESSAGES

»» Needs one -D to represent data! ««

The CENTER command line must contain one (and only one) -D. This only applies to SEND and AUDITION commands. GET commands will never include a -D.

»» NIBBLE Chksum needs NIBBLE Format! ««

If you have set the CHECK SUM METHOD to NIBBLE 1 or NIBBLE 2, the FILE FORMAT must be set to either NIBBLE HI/LO or NIBBLE LO/HI.

»» Number can't be less than zero! ««

The active string gadget can't be a negative number.

»» Number must be greater than zero! ««

The active string gadget must be greater than zero.

»» Ofst is between Start and Stop! ««

The check sum OFST cannot be between the first and last bytes that are included in the check sum calculation. The check sum must fall outside of the range of characters that are used to derive it.

»» Ofst must be zero with NONE option! ««

If the CHECK SUM METHOD is set to NONE, it is assumed there is no check sum and the check sum OFST string gadget must be set to zero.

DRIVER CREATION ERROR MESSAGES

»» Ofst not within first Bank Item! ««

The check sum PLACE cycle gadget has been set to ITEM OFST which indicates that a check sum must be calculated for each Bank item in the SysEx packet. You must provide a check sum OFST that falls within the first Bank item.

»» Patch Max must be > Patch Min! ««

Maximum values should always be greater than minimum values!

»» Patch Max required with Patch Min! ««

»» Patch Min required with Patch Max! ««

Patch Min and Patch Max work together. Either set both of these string gadgets to "Off", or populate them with valid minimum and maximum values respectively.

»» Patch Min/Max required with -P! ««

If a GET and SEND command contains a -P, you must enter the minimum and maximum values that can be used for the -P patch number substitution.

»» Separate each byte! (XX XX XX) ««

All commands must be entered as hex bytes separated by spaces. For example, the command to retrieve a Voice Bank from a DX-7 would be entered as follows ==> F0 43 20 09 F7. A Roland Address Inc would be entered as ==> 00 02 00.

»» Should SysExType be part of Driver? ««

You are attempting to SAVE a Driver but you have not moved the SysEx type that is displaying in the window into the »» SysEx TYPES

DRIVER CREATION ERROR M

«» box. Use the UP ARROW if you want the values displayed in the window to become part of the Driver. Otherwise click on the TRASHCAN gadget.

»» *Stop Ofst must be > Start Ofst!* ««

The last character of the Data portion of the SysEx packet must be a > the first character of the Data portion of the SysEx packet.

»» *SysEx data must be decoded!* ««

Use the KEYBOARD gadget to "decode" the SysEx packet. The gadget alternate image will display when you are viewing "decoded" data.

»» *SysEx data must be coded!* «« ;

Use the KEYBOARD gadget to "code" the SysEx packet. The gadget keyboard image will display when you are viewing "coded" data.

»» *Use one -P per entire command set!* ««

A command set is comprised of the FIRST, CENTER and LAST command lines. These three (3) lines can only contain one (1) -P amongst them.

»» *-P required with Patch Min/Max!* ««

These string gadgets store the minimum and maximum values that are to be used for the -P patch number substitution. You must inform The PatchMeister where to use them by entering a -P in one (1) of the commands to GET data and also in one (1) of the commands to SEND data.

DRIVER CREATION ERROR MESSAGES

»» -P invalid in AUDITION command! ««

You cannot use -P in an AUDITION command. You must commit yourself and key a specific patch number directly into the command. You can then enter a Program Change command (C0 00) on the LAST command line to force your synth to play the patch number used by the AUDITION command. When entering the Program Change command, replace the 00 with the patch number you have entered into the AUDITION command; i.e. C0 44.

A

Accessories, 91
 Menu, 91, 92
 Window, 91, 92
 Audition
 Channel, 21
 Sounds, 27
 Auto Audition, 14, 29

B

B&P Pro/Superjam! Menu, 15
 Bank
 Editing Buttons, 34
 Items, 80
 Menu, 7, 9, 32, 34,
 38, 96
 Size, 81
 Window View
 Options, 32

Banks, 31, 32, 33, 34, 35, 36, 38
 Bars&Pipes Professional, 91, 92, 93

C

Capture Files, 1, 3, 4, 49, 50, 51
 Capturing A Bulk Dump, 49
 Category, 67

Ch, 17, 18, 19, 20, 21, 22, 23
 Ch, D, N1, N2, Ck, 64, 70
 Check

Disk Space, 15
 Memory, 15

Chech Sum: Ofst, 69, 79

Checksum
 Method, 75
 Place, 75

Clipboard, 58
 Commands -Or- Manual, 73
 Complete Integration, 93
 Compress Bank, 10
 Create

Driver, 61, 64, 81
 Driver Window, 61,
 62, 63, 64, 65, 66, 67,
 81, 82, 87, 89
 Driver Window
 Gadgets, 64, 89

Creating Setups, 46
 Customizing Your Banks, 34
 Cycle Button Parameters, 72

D

Dash, 19
 Data

Start, 69
 Stop, 69

Deleting Files From
 Libraries, 56
 Display

All Info, 54

Options..., 53

Drawer Selector, 57
 Driver, 1, 4, 17, 18, 19, 20, 23, 61, 62, 63, 64, 65, 66, 67, 72, 76, 81, 82, 83, 84, 87, 89, 90

Menu, 12, 96
 Duplicator, 34, 35

E

Eraser, 19, 34, 36, 48
 Error Messages, 97
 Esc, 96
 Exporting Files, 60

F

F0...F7, 75
 File:

Ch Ofst, 79
 Fchan Mn And Ch
 Mx, 80
 Fsize, 80

File

Fixed -Or- Max, 75
 Floppy Disk Installation, 6

G

Get -> Send -> Audition, 6

INDEX

H

Hand, 18, 34, 35, 47
Handshake, 73, 74, 84, 89
Hanging Notes, 30
Hard Disk, 5
 Installation, 5
Help, 25, 26, 96
How To Create A Driver, 64, 81

I

Importing Files, 59
Installation, 5, 6
 Quick, 5

K

Keyboard, 64, 68, 69, 71, 72, 83, 88

L

Libraries, 1, 2, 53, 54, 55, 56
Library Menu, 11, 12, 53, 54, 56, 96
Library Window, 53, 54, 55, 56, 57, 58
 Buttons, 56
Location: Loc (Offset And Size), 78

M

Magic Wand, 32, 34, 35
Magnifying Glass, 23, 57, 58
Menu

Overview, 7
 Shortcuts, 96

MIDI <-> Info, 63
MIDI

Channel Ofst, 69
 Commands, 61, 63,
 76, 77
 In Port, 64, 67, 82,
 83, 84, 85, 86
 Menu, 13, 96
 Out, 21
 Route, 17, 20, 21, 22,
 23, 33, 37, 40, 42, 43,
 44, 49, 50, 51, 57, 58,
 64, 66, 67, 83

N

Name:

Format, 74, 89
 Ofst, 80
 Size, 80

New Bank, 10
Next Volume, 56, 57
Notes & Search Keys, 40, 43, 46, 51
Number Format, 75
Numeric Keypad, 95, 96

O

Octaves, 29
Opening
 Bank Window, 31
 Capture Window, 49
 Setup Window, 45
 Snapshot Window, 41

P

Parent, 57
Patch, 17, 18, 19, 20, 21, 22, 23
 #: Mn And Mx, 78
Patch Bay
 Channel, 21, 49, 51
 Program Number,
 21, 49, 51
Patch Number, 22
Pencil, 18, 34, 35
Playing Music, 27
Printing
 Banks, 32
 Libraries, 55
Project Menu, 7, 8, 12, 96

Q

Question Mark
 Button, 68, 69, 72,
 87
 (Bank Fields), 68

(Check Sum And
Data Offsets), 69
(Name Fields), 68
Quick Installation, 5
Qwerty Keys, 28, 29, 30

R

Ram -Or- Rom, 73
Rebuild Library, 12, 56
Roland Address Inc, 78

S

Save

Banks, 32
Capture Files, 50
Driver Lists, 23
Driver, 90
Libraries, 55
Patch List, 11
Setups, 46
Snapshots, 43
Sysex Files, 40

Search And Locate..., 54
Send To Synth..., 14
Sending To Your Synth

Bank Windows, 33
Capture Windows, 50
Setup Windows, 46
Snapshot Windows
To Your Synth, 43,
44

Sysex Windows To
Your Synth, 40
Settings Menu, 14
Setup Editing Buttons, 47
Setups, 45, 46, 47, 48
Sharing Your Files With
Other Programs, 59
Shift Key, 96
Shortcuts And Guidelines,
95
Snapshots, 1, 3, 4, 41, 43
SuperJAM!, 91, 93
Swap, 19, 34, 36, 48
Sysex

Communications
Channel, 20
File Size, 69
Packet, 68, 69, 70,
71, 73, 74, 78, 80, 82,
85, 86, 88
Sysex Files, 1, 3, 22,
39, 40, 53, 54, 55
Type Text Field, 65
Types, 62, 63, 64, 65,
66, 82, 89
Window, 39, 40

T

Taking A Snapshot Of Your
MIDI Setup, 41
Target, 34, 36, 48
Text Parameters, 76
The Patchmeister

Accessory, 91, 92, 93
Window, 17, 18, 19,
20, 22, 23
Window Buttons, 18
To Synth, 33, 37
Toggle Switch, 63, 67, 82, 88
Transfer Patch List, 11
Trashcan, 65

U

Using The Help Feature, 25

V

Volume Selector, 56

W

Work Area, 63, 64, 65, 67, 68,
69, 70, 71, 76, 82, 83, 84, 85,
86, 87, 88, 89

Z

Zxcvbn Keys, 28, 29

